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ORIGINAL ARTICLES.

REMARKS ON PSEUDO-MEMBRANOUS CROUP AND DIPHTHERIC CROUP, AND THE VALUE OF INTUBATION.[1]

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THE two principal points which I think we should consider and discuss to-day are the identity or non-identity of diphtheric croup and pseudo-membranous croup and the value of intubation in these cases.

When we consider the wonderful advances made in bacteriology in the past few years, and the ability of the bacteriologist to designate the exact microorganisms which are the cause of many diseases, and especially when we remember that the specific microörganism of diphtheria is a well-recognized bacterium, it would seem as though the first proposition for discussion were useless; for the presence or absence of that bacterium should settle the question as to the identity of the two diseases. But such is not the case. A review of the literature of the subject will show quite a diversity of opinion on this point, with an array of substantial reasons, both for and against the opinion.

In France, where diphtheria was known and studied long before it was recognized in England or in this country, writers on this subject, I believe, are almost a unit in their belief that all cases of laryngeal croup are diphtheric; and their writings and experiences have had an effect upon the Germans, who hold the same belief; and to some extent, though not so universally, upon the English, many of whom also believe in the identity of the two diseases. Mackenzie refers to the influence of the experience of the French in his argument supporting the unity theory, and gives them the credit just referred to.

In this country, however, pseudo-membranous laryngitis was recognized as a well-defined pathologic condition, its clinical features carefully observed and accurately recorded by competent physicians long before diphtheria invaded our land. As remarked by J. Lewis Smith, it is impossible to suppose that all these cases coming in the hands of able practitioners, as they did, should have been examples of unrecognized diphtheria primarily affecting the windpipe, and none of them showing the symptoms of faucial diphtheria. It is impossible to suppose that so many able observers should have been so completely deceived in their clinical study of the disease, and it is also impossible to suppose that so many cases as are recorded and were under observation should have been primary laryngeal diphtheria, for we know that it is not by any means the rule, nor does it occur in many cases, that the diphtheric pseudo-membrane forms primarily in the larynx. The result of the early experience and study of membranous croup, when diphtheria was an unknown disease in this country, has, I suppose, had much to do with the faith many American physcians have in the dual theory. And this early experience is to me a strong argument in favor of that theory. It is no argument to the contrary to say, as is so often done, that, because croup has increased vastly in numbers of cases since diphtheria was introduced into this country, therefore diphtheria is the sole cause of croup. It only argues that diphtheria is another factor in the production of croup, and that the larynx is only another field for the development of the diphtheric membrane. But it would seem as though the careful bacterial study of these cases should elucidate the point which has been discussed by many writers, and settle it beyond dispute. As Osler remarks, work in this field is very much needed.

The Klebs-Loeffler bacillus is the bacterium of diphtheria, and is found in all cases of diphtheric croup. When found, therefore, in any case of membranous croup, it of course proves the disease to be diphtheric. But it is not found in the fibrinous exudation of membranous croup. There are various cocci found, the staphylococcus and streptococcus, and among others the streptococcus pyogenes, but not the true bacterium of diphtheria.

If this proposition can be established, if it can be shown that in a certain class of cases the Klebs-Loeffler bacillus does exist, and in a certain other class it does not exist, there should be little difficulty in settling the question of identity or non-identity of the two diseases. The anatomic appearances of the two diseases are so nearly identical that if there is any difference it is not distinguishable, and unless they can be differntiated bacterially, as suggested, the question of unity must still remain open.

I find recently published the following results of

[1] Read before the Clinton County Medical Society, August 15, 1894.

the work of different observers bearing on this point of the bacteriology of diphtheria, which in this connection lead to interesting conclusions: Baginsky, of Berlin, examined 154 cases of diphtheria, and found the Klebs-Loeffler bacilli in 118, and none in the other 36. Prudden, of New York, examined 24 cases of diphtheria, complicating or following scarlet fever, and found no Klebs-Loeffler bacillus. Martin examined 200 cases, and found the characteristic bacillus in 121, leaving 79 without the diphtheric bacterium. Park, of New York, found it in 129 cases, and absent in 79. Thus, in a total of 534 cases of what was diagnosticated as diphtheria by different observers, the Klebs-Loeffler bacillus was present in 366 and absent in 168. With this array of cases, and their bacteriologic examination before us, let us refer to the rules formulated by Koch for the establishment of a complete chain of evidence as to the production of a disease by any special micro-organism. They are as follows, viz.:

1st. The presence of the organism in all cases of the disease, and in such distribution as will explain the lesion.

2d. The isolation of the organism in pure culture.

3d. The reproduction of the disease by inoculation with the isolated organism, and the presence of the latter in the tissues of the inoculated animal.

It is only necessary to apply the first of these rules to the foregoing cases to force us to the conclusion that we either have two diseases diphtheric in character, but quite different in their bacteriology, or that the Klebs-Loeffler bacillus is only accidentally present, and has really nothing to do with the case.

Few of us, I think, would have the temerity to assert that the latter part of the proposition is correct, and consequently we must conclude that there are two diseases diphtheric in nature and very similar in their manifestations, yet differing quite materially in their bacteriology; the one a contagious disease, the other not, and, as has been shown in a further report of the cases referred to, the one a much milder disease and more prone to recovery.

The existence of two diseases having the same physical appearance but differing in their bacteriology, the one a true diphtheria, and the other a false diphtheria, has been recognized lately by the Chief of the Bureau of Bacteriology of Brooklyn, and the difficulties of diagnosis have been acknowledged to the extent of establishing a method of bacteriologic examination of all cases of suspected diphtheria at public expense. In a recent journal I find that this Bureau of the Department of Health of Brooklyn recognizes the fact that

"Recent bacterial investigations have shown that a considerable proportion of the cases of pseudo-membranous and exudative inflammations of the throat and upper air-passages, commonly considered as diphtheria, and having the anatomic appearances found in diphtheria, are not true, but false diphtheria. On the other hand, it has been shown that a considerable proportion of the cases which are apparently false diphtheria prove, on bacterial examination, to be true diphtheria. While in true diphtheria the mortality is very high and the danger of transmission to others is very great, in false diphtheria the mortality is low and the danger of infection slight."

These statements and the recognition of a true and a false diphtheria, the one a disease in which the Klebs-Loeffler bacillus is found, and the other in which various microörganisms, but not the diphtheric bacterium, are found, may account for a statement often made to me by a member of this Society, that in Kansas, where he formerly practised, his cases of diphtheria were much milder and the recoveries more frequent, so that death was seldom expected from a case of diphtheria in that locality. Such cases did not differ in their physical aspect from the diphtheria seen elsewhere, and which is so much more fatal, but no doubt would have differed very essentially if examined bacterially.

If it is true that there is a true and a false faucial diphtheria, are we not justified in the belief that there is also a non-identity of the two diseases under discussion; or, to be more moderate, are we not correct in at least considering the question still open? The truth is that the number of cases of laryngeal croup examined for the purpose of elucidating this point is yet too small for positive conclusions, and it is a matter of surprise that there has not been a greater amount of investigation on this subject by bacteriologists. The question of the bacteriology of the disease seems to me in our present knowledge to settle down to the statement, the author of which I cannot now recall, viz: "If the Klebs-Loeffler bacillus be accepted as a *sine qua non* in the etiology of diphtheria, then croup (pseudo-membranous laryngitis) must necessarily be separated from it." Clinically, there is a difference in the symptomatology of the two diseases more easy to describe than appreciate, but the dissimilarity does certainly exist. I must confess, however, that my own experience is that of all with whose views on the subject I am familiar, that it is no easy task to differentiate between pseudo-membranous croup and primary laryngeal diphtheria. This fact is illustrated in Case VI reported herewith. In this case I was as careful as I could be in my efforts at making a diagnosis, and had the assistance of several other physicians, and yet the results, much to my sorrow and chagrin, showed that we were mistaken.

To summarize and abbreviate as much as possible, the clinical differences consist in about the following points, viz:

1. Membranous croup usually begins in the larynx, and the fauces are but slightly if at all effected.

An examination of the fauces in a vast majority of these cases reveals nothing. There may be very little increased redness and almost no swelling.

2. Croup is not infectious.

I have attended, and so have many others, case after case of pseudo-membranous laryngitis in which there was every reason to expect other children to contract the disease if it were contagious, and yet no such result has followed. This point is well illustrated in the following cases, with the exception of one in which an error of diagnosis is admitted. It is said by Dr. J. C. Wilson in Pepper's *System of Medicine*, that cases of tonsillar diphtheria also occasionally run their course without infecting others, though there may be exposure of susceptible persons. But it is admitted that diphtheria is an infectious disease, and the instances of escape of susceptible persons are exceptional; whereas, in the experience of the physicians of this city, at least, the rule in membranous croup is that the affection is non-infectious, and susceptible persons are exposed with impunity.

3. Croup has none of the serious asthenic symptoms of diphtheria.

All the serious symptoms which arise in croup are due to the obstruction of respiration, and therein alone lies the danger.

4. Croup is not followed by paralysis.

In contradiction of this statement, Mackenzie says that the reason for this is that about all cases terminate fatally, but in those cases which recover paralysis does occasionally occur. His article was written before intubation was extensively done, and consequently there were but few recoveries. Since then many cases have been saved by this operation; but I have learned of but few cases of paralysis within my own experience or that of others, and in those cases we are willing to admit that the disease was probably diphtheric, for it must be borne in mind that we do not assert that cases of pseudo-membranous laryngitis are never diphtheric and that we are painfully conscious of the difficulties of diagnosis.

5. Croup is a sthenic disease, while diphtheria is adynamic.

6. Croup is a local disease.

Whether diphtheria is first local and then general, or *vice versa*, is still a disputed point, but it is a fact that it is ultimately constitutional. No such statement substantiated by sufficient proof can be made in regard to croup.

7. The lymphatic glands are not affected in croup, but are enlarged in diphtheria.

This is explained by Mackenzie and others, by citing the well-known fact that there is no communication between the mucous membrane of the larynx and the superficial cervical glands.

8. There is no albuminuria in pseudo-membranous croup.

I am sorry the urine was not examined in all of the cases here reported, but this paper was not contemplated at the time the cases were under observation. The examination was made in only one case, and that was diphtheric, and showed a quantity of albumin.

While, then, on these grounds of bacterial and clinical difference, we argue the non-identity of the two diseases, it must still be admitted that it is very difficult and, in many cases, impossible to diagnosticate between cases of primary laryngeal diphtheria and pseudo-membranous croup. One of the cases here reported shows this difficulty, for after being carefully examined by several physicians and pronounced pseudo-membranous croup, subsequent events proved it to be diphtheric. This difficulty of diagnosis is spoken of by most authors, and in fact, is used as an argument for the identity of the two diseases.

This difficulty of diagnosis being true and an admitted fact, I fully indorse the action of the New York Board of Health in designating all cases of croup diphtheric, as being the safest method under the circumstances for the avoidance of possible risk of contagion. In fact, I would urge upon all, in view of my own experience, the propriety of isolating all cases of croup, and in future I shall certainly do so myself, though this is not an admission of the identity of the two diseases, but only a confession of the difficulty of diagnosis.

For the purpose of illustrating some of the points enumerated, namely, the non-contagiousness of croup, clinical history, pathology, difficulties of diagnosis, and also the results of treatment, I call attention to the following cases:

CASE I.—Daughter of Geo. G., aged six years. The brother had died a week or ten days previously of diphtheric croup. She had no deposit on the fauces, and I do not recall any glandular enlargement; nevertheless, considering that her brother had died of diphtheric croup a few days before, I felt justified in pronouncing her case also diphtheric croup. There was no fetor of the breath, such as usually occurs in diphtheria, nor was the constitutional disturbance in any way different from what we would expect in a case of pseudo-membranous laryngitis. The usual remedies failed, and I attempted intubation with the assistance of Dr. Watson. The operation was a complete failure. At that time I thought it was on account of loose membrane filling the tube, thus interfering with respiration, but now I believe it was want of skill in introducing the tube, and have my doubts whether it was in the windpipe at all. It was my first case of intubation, and I have learned a good many things about the operation since.

CASE II.—A son of John C., aged seven years,

was taken with symptoms of croup, and the disease rapidly developed, so that there was no difficulty in diagnosticating his disease as membranous croup. There was no offensive odor of the breath nor glandular enlargement, and the constitutional disturbance was mild, the temperature not running much above 101° or 102°. His brother played around him, kissing him and inhaling his breath, and in fact no effort was made to keep them separated, nor were any disinfectant measures used. His brother and some other children who were allowed the freedom of the sick-room without restraint did not take the disease, nor did any of them have the least sore-throat. I was somewhat anxious to know whether they did or not, and so kept myself informed in regard to all who came in contact with the patient. With the assistance of Dr. Armstrong I attempted intubation in this case. Whether the tube was in the larynx or not I am not prepared to say, for at that time my knowledge of the landmarks was not very accurate. But this I do know, that with a mighty effort he coughed up the tube and with it a membrane several inches long and a perfect cast of the windpipe. He died, however, of exhaustion the next day. In this case, as in case No. 1, the operation was too long delayed even if skilfully performed, to be of any service, deep cyanosis having occurred and mucous râles being distinctly heard over the lungs in both cases.

CASE III.—A Russian Jewish boy (son of A. S.), aged five years, deaf and dumb, was taken with croup-symptoms, and Dr. Watson being called, diagnosticated the case as one of membranous croup. I saw the child the next day with the doctor and confirmed his diagnosis. We intubated him, and he recovered. No precautions were taken to keep the other children away, and the surroundings were the most unhygienic that can be imagined. Though other children had free access to him no other cases occurred in the family or neighborhood. A peculiar accident happened in this case. The little fellow being deaf and dumb could not be made to understand that he was not to disturb the string, and in some way he managed to chew the string off and finally to get the tube into the esophagus and swallow it, passing it by the rectum some days after. That it was really in the windpipe is proved by several circumstances. The breathing was much improved after its introduction, and he had the peculiar metallic ring in his voice. He vomited before he was put to bed, so that if the tube had been in the esophagus, instead of in the windpipe, he would certainly have thrown it up. While the tube was in position with the string fixed to his ear he was given liquid food, which he swallowed easily, and this he could not have done had the tube been in the gullet. I mention this accident, as it was a peculiar one and because it had afforded some amusement to my friends. I was especially chagrined at it, as it was my first case of intubation in which the patient recovered.

CASE IV.—A daughter of Charles G., aged four years, was taken sick with vomiting and fever, and the parents thought also sore-throat. I was called to see her in the evening and found the child asleep on the mother's lap. When I attempted to examine her throat she struggled and resisted so that I could not see what her condition was. I intended to see her the next day, but the father came to see me and said she was up and running around and that I would not need to call. On the fourth day of her illness, however, he came to see me again and said that she had lost her voice, and, immediately suspecting the case to be one of true croup, I at once went to see her. I found her running around the room, apparently well, except that she had lost her voice. An examination showed that she was suffering with diphtheric croup, the fauces and tonsils being covered with the membrane. She was immediately put to bed and a very serious prognosis given. She was isolated from the rest of the family and given mercuric chlorid and tincture of ferric chlorid, and a spray of bichlorid was also used. On the fifth day respiration was so much interfered with that with the assistance of Dr. Watson I intubated with the most gratifying results, the little one getting so much relief that she herself said "I'm better." The tube remained in place and gave every satisfaction until the seventh day (two days) when it became filled with membrane and mucus, and after a while was expectorated along with shreds of membrane. The respiration again becoming labored the tube was re-introduced, with complete relief of the dyspnea, but the child died on the following morning, not from interference with respiration, but from the toxemia of the diphtheric poison.

CASE V was a son of S. E., aged five years, seen by Dr. Watson, and a diagnosis of pseudo-membranous laryngitis was without difficulty made. I saw the case in consultation on the next day, and did not hesitate to confirm the diagnosis, and that evening performed intubation. The tube remained in place for four days, during which time there were no untoward symptoms, the little fellow feeling well, and expressing a frequent desire for something to eat, and making a complete recovery. There was no effort at isolation, and though other children had frequent communication with him no other cases developed.

CASE VI.—A son of G. W. B., aged four years, had been sick two days previously to my visit, with croupy symptoms and fever, but had not complaind of sore-throat, nor was there any enlargement of the cervical glands. There was no especially offensive odor to the breath, but on inspection of the fauces there was distinctly visible a small white patch of pseudo-membrane on the posterior and inferior aspect of each tonsil. The systemic disturbance was slight, the temperature being 103° in the axilla, and digestion and appetite not more impaired than would be expected with such a febrile reaction. I am now convinced that I made a mistake in diagnosis when I pronounced the case one of membranous croup. No precautions were taken to prevent the other children from having access to the boy, and the consequence was that several cases of diphtheria of a mild type, and one of diphtheric croup, to be referred to again, followed this case in the same family. My only justification is that the case was seen by a number of other physicians, and the diag-

nosis was confirmed by all. It certainly was not secondary to faucial diphtheria, and was so mild in all the symptoms, except those of obstruction, that it was difficult to realize that it was actually a case of diphtheric croup affecting primarily the larynx. The interference with respiration was so marked and continuous that in the presence of a number of physicians I intubated him. He was given tincture of ferric chlorid and mercuric chlorid, and allowed to inhale the vapor of slaking lime. The tube remained in place for four days, the temperature gradually fell, and as there were no contradicting symptoms the tube was removed at the end of this time, and with the exception of the fact that about this time he developed measles, through which he had to pass in the usual way, he made an uninterrupted recovery.

CASE VII.—A son of W. H., aged seven years, was seen by Dr. Watson on April 29th. An inspection of the fauces revealed diphtheric membrane covering the tonsils and palate, and this with the interference of respiration, loss of voice, rapid feeble pulse, and temperature of 103°, made it very easy to diagnosticate the case as one of diphtheric croup. The boy had been sick less than twenty-four hours when the physician was called, and at that time he was croupy, so that the probabilities are that the membrane was formed previously in the larynx, or at least at the same time that it formed in the fauces. The child was completely isolated from the other children of the family, and no other cases followed. He was given the usual course of treatment, but it proved of no avail, and two days after he became ill the obstruction to respiration made it necessary to intubate, which we did successfully and with complete relief to his breathing. The tube used, however, was too small, and he coughed it out about six or eight hours afterward. A larger one was introduced and remained. A few days afterward he developed measles with catarrhal pneumonia, from which he died four days after intubation. The breathing was not in the least obstructed, and he died just as he would have done from pneumonia unaccompanied by croup.

CASE VIII.—A son of A. F., aged twelve years, showed croup-symptoms, and Dr. Corson, of Charlton, was called. The boy had a moderate elevation of temperature, no swelling of the cervical glands, no offensive odor of the breath, and no deposit of membrane on the fauces. Dr. C., who is a strong advocate of the diphtheric origin of all these cases, confessed that this was different in its clinical features from the cases of diphtheric croup which he had seen before. When called in consultation with him I fully agreed in the diagnosis of pseudo-membranous croup. Obstruction to respiration had become so serious that it had been feared he would not be kept alive until I should arrive, and so we proceeded with intubation. The child made a complete recovery, and in four days the tube was removed. He was not isolated, and, so far as I know, no other cases can be attributed to him as the source of infection, though there was ample opportunity if the disease had been contagious. A peculiarity of this case was the age of the patient. He was the oldest child I ever saw with pseudo-membranous croup. Cases at this age are certainly very rare.

CASE IX.—A son of R. C. H., aged six years, was taken with symptoms of catarrhal croup some two weeks after an attack of measles. He had been sick several days when his father came to me for some croup-medicine, never thinking of membranous croup, but incidentally and rather accidentally remarked that the little fellow had lost his voice. My suspicions were at once aroused, and on visiting him my fears were confirmed, though I had some difficulty at first in deciding between catarrhal and pseudo-membranous croup. There was no deposit in the fauces. The temperature was 101° under the tongue. The boy was given tincture of ferric chlorid and mercuric chlorid, with inhalations of lime-water and carbolic acid. He was not isolated, and his sister played with him, and once I found her lying beside him. Other children also were admitted to the room. No other cases followed. Obstruction to respiration became so alarming that intubation became necessary on the third day after I was called, which I performed with the assistance of Dr. Watson and my student, Mr. Salmon. Rapid recovery ensued.

CASE X.—This was the youngest child I think I ever saw with membranous croup, being only sixteen months old, small for its age, and of a strumous diathesis. The parents not appreciating the gravity of the disease had neglected it till the last minute. With the assistance of Drs. Watson and Lichtenthaler I intubated, but not without a good deal of difficulty. When I saw the child a few hours afterward its temperature was 105° in the groin, and while respiration was not obstructed, it breathed 74 times a minute. It died seven hours after intubation, but, much to the parents' satisfaction, was relieved of the dyspnea.

CASE XI was a son of G. W. B., aged two years. This is the case referred to in reporting Case V, and occurred in the same family just two months later. In the meantime, however, there had been several cases of diphtheria of a mild type in the family, and I had urged the isolation of the affected children without avail, though as the original source of the disease was an old partly filled well into which the wash-water and refuse were thrown, and which communicated with the house by a pipe, and which I had tried in vain to have removed, they would probably have taken the disease even if they had been isolated. This child when first seen had faucial diphtheria, but no symptoms of croup. After a few days' illness, however, he began to be croupy, and his voice was markedly changed. On "flood Monday" he became so croupy and his respiration so labored that intubation was necessary. The house being surrounded by water, Dr. Watson and I got into a boat, went out, and performed the operation. On the fourth day after intubation râles were heard all over the lungs, and little air seemed to enter the vesicles. I thought that possibly the tube was filled with mucus and membrane, and removed it, but without relief, and the child died the same evening. Evidently the deposit had extended to the bronchial tubes, and I have no doubt even into the smaller ones.

On analysis of the foregoing cases, we find that five were diphtheric and six were not, and that in all except one of the former isolation was enforced so that no other cases developed from them; but in the latter, in those cases diagnosticated as membranous croup, no effort was made to keep other children away, and yet in no case except the one referred to as a mistake in diagnosis did any other children contract the disease or any sore-throat, though in every instance there was exposure of susceptible persons. On this fact, as well as the clinical history, is based the supposition that the diagnosis in these cases was correct. The one case in which a mistake was made I now believe could have been diagnosticated properly if due importance had been attached to the small speck of membrane on each tonsil. Though it was not larger than a grain of wheat, I believe such a deposit is almost diagnostic of diphtheria, for as far as I can now recall I think I never saw a deposit on the tonsils in pseudo-membranous croup.

Clinically, it may be noticed that in these six cases of membranous croup there was no deposit of membrane in the fauces, a fact which seems a strong argument in favor of the diagnosis, and especially so when we recall that in 156 cases of laryngeal diphtheria referred to by Dr. Northup, in only one was the membrane in the larynx alone, showing the great tendency to spread to adjoining parts in diphtheria as contrasted with the local tendency of membranous croup.

Of the five cases that recovered not one had paralysis of any kind.

Of those cases that recovered only one was an example of diphtheric croup, and of those that died all but one was diphtheric, the remaining one dying from a late operation in an enfeebled child of extreme youthfulness.

In closing, I wish to make a few remarks on the value of intubation in these cases.

O'Dwyer estimates that one child in ten gets well of membranous croup, whether diphtheric or pseudo-membranous, under medical treatment, but from my own experience and that of others with whom I have been intimately enough associated to know of their experience, I am convinced that when obstruction does really exist, when there is a pseudo-membrane actually formed, this percentage of recoveries is too high. And moreover I am convinced that when recovery does occur it is more by the accidental removal of the obstruction or by the *vis medicatrix naturæ* than by the potency of any drug or plan of medical treatment we can select. But even admitting that one in ten recovers, the mortality is still wofully high, and anything that will reduce it is certainly to be sought after most diligently. Intubation has reduced the mortality to 26.77 per cent., or roughly estimated, about one in four recovers after this operation, which is quite a fall in the death-rate, as is readily perceived; but I believe as the operation becomes better known, and is consequently not held in reserve to be used as a last resort, but, on the other hand, is performed early, the mortality will be still greatly lessened.

If we refer to the cases here reported and exclude the first two cases, which should not be included because they were not (for the want proper skill) intubated at all, and should not, therefore, be included in the intubations, we see that five of the nine cases intubated recovered, 55.5 per cent., or more than double the proportion of successful operations as published in the books. Of course, the number is too small to make the results of much statistical value, as the next series of cases may reduce this favorable showing considerably, but I attribute the results to the fact that in all cases an operation was urged as soon as the obstruction became very decided and before the cyanosis became too pronounced. I believe that one of the cases (Case X) would at least have stood a better chance for recovery had I seen it earlier, notwithstanding its extreme youthfulness, being only sixteen months old, and of a strumous diathesis. I saw it only nine hours before death, and it died seven hours after intubation.

Even in the cases in which intubation failed to cure, only in one case did it fail to give relief, relief most gratifying to parents and attendants, and no doubt, still more gratifying to the little sufferer. In the case in which it thus failed to relieve I am satisfied tracheotomy would also have failed, as it was quite evident the membrane had extended to the bronchial tubes, and, it seemed, also into the smaller branches.

One of the great advantages of intubation is the willingness of parents to permit it, and if physicians would be less afraid to propose it I am sure there would be more early operations, and consequently more recoveries.

RHYTHMIC HEAD-MOVEMENTS ASSOCIATED WITH NYSTAGMUS OCCURRING IN INFANTS AND YOUNG CHILDREN.

BY EMILY LEWI, M.D.,

[From the service of DR. HENRY KOPLIK, Good Samaritan Dispensary, New York.]

NYSTAGMUS associated with rhythmic movements of the head is a rare affection of infancy and childhood. The occurrence of nystagmus alone is not uncommon; we find a plentiful literature on this subject. Not so with the combined symptoms. It has been my good fortune to have met and studied a number of cases of these rare associated nervous disorders of the eye and head, in the service of Dr.

Henry Koplik, and it is the object of this paper to call attention to these cases in an analytical critique of their leading symptoms.

The most constant phenomenon in these cases, and one that immediately attracts attention, is the rhythmic oscillation of the head, either in the horizontal or vertical direction. Sometimes a combination of these movements has been observed. The eye-disorder is a nystagmus, occurring either at the same time with the head-movements or independently of them.

Ebert and Faber called attention to these cases many years ago. Henoch, under the title of *eclampsia nutans*, mentions a class of cases similar to these. Dr. Stephen Mackenzie and Dr. Gee have each reported two cases which must be put in this category. Dr. Gordon Norrie, several years later, in the *Ophthalmic Review*, cites cases of this type. The first American observer to publish a case, was Dr. A. Caillé, in 1890. Shortly following this there appeared Dr. W. B. Hadden's first series of cases, followed by a second series about two years later. Dr. Hadden's studies are by far the most complete and valuable contributions that have been published on this subject.

In the following series no two cases are identical in detail; their similarity is, however, sufficiently evident to justify considering them all of the same class:

CASE I.—Celia S., aged seven months, was seen for the first time on April 7, 1894. The family history is negative; the child is a breast-fed baby, and has always been well; when five months old she fell from her chair, and the next day the mother noticed both head-movements and eye-movements; the latter were almost incessant; they have improved somewhat; the head-movements are about the same as at first. The examination showed a healthy child with rachitic beading of ribs and enlarged epiphyses. The head-movements are both lateral and up-and-down. The former are fairly rhythmic, occurring in series of about five or six, the first two describing a larger arc, each one growing shorter, the last being but a slight movement. Then there may be a nod or two, or a repetition of the previous rotary movements. These movements are much alike in all the cases, and any deviation will be noted. The head-shaking is increased whenever the child wishes to direct her attention to anything, or when she attempts to accommodate at a distance. Blindfolding causes complete cessation of the head-movements. The nystagmus is marked and very rapid, both horizontal and vertical, more constant in the right eye. Forcibly restraining the head does not affect the nystagmus; both head-movements and eye-movements cease when the child lies in her crib. It was noted that the room in which the child lived was unusually dark, a kerosene lamp being kept burning the entire day; moreover, the mother very rarely took the child out in the air. On April 12th the child was seen again. The nystagmus sometimes preceded the head-shakings. A lighted candle held near the eye and then at a distance, then slowly moved up-and-down, to the right, and to the left, showed that the head-movements increased when the child was looking at the candle at a distance of eight or nine feet. The same test was made with a bell and a bright red apple, and the results were the same. The pupils react to light and distance. The child was seen about every ten days. On May 4th two teeth, lower central incisors, were noticed. The nystagmus was somewhat improved. The muscles of the back of the neck were somewhat rigid. On May 25th the child fell from her chair again; for a few days the nodding and nystagmus were increased. On June 6th the nystagmus was less frequent, and the head-movements were rotary; no nodding was observed. On June 18th the head-movements were less frequent, the nystagmus still present. On June 30th the head-movements were not observed; there was occasional nystagmus, more noticeable in the right eye. On July 12th the child was well; neither movement nor nystagmus was observed; the mother said that she had noticed neither for one week.

In brief, we have in a rachitic child, giving a history of traumatism, rhythmic head-movements, nodding and rotary, also a horizontal and vertical nystagmus more marked in the right eye; the nystagmus increases when the patient accommodates for distant objects, and this may or may not be synchronous with the head-movements. Both disturbances gradually improved, then ceased, the nystagmus existing a few days after the head-movements had discontinued.

CASE II.—Jenny S., aged seven months, is a breast-fed baby, bright, but a very restless child, and in perpetual motion. The mother is a very nervous, hysterical woman; two of her previous children died of convulsions. The mother has noticed a shaking of the head for the past three months. The fontanel is depressed and large; the epiphyses are large; there are no teeth. There is no traumatic history. Rotary movements of the head exist the same as in Case I, except that occasionally the child gives a quick forward jerk of the head toward the right side. The nystagmus is horizontal, occurring at the same time as the head-movements. On April 10th the candle, bell, and apple were used as in Case I. The head-movements increase when looking at a distance; nystagmus is observed independently of the head-shakings. The pupils react perfectly to light and distance. Blindfolding the child causes discontinuance of the movements, and the same is found to be the case when lying down. On June 6th the child was seen at intervals, but nothing new was noticed. On June 15th the muscles at the back of the neck are found to be slightly stiff; an object held close to the eye causes all motion to cease. The child wakened from a sound sleep, and for about two minutes nothing abnormal was noticed; when she began to observe the objects about her, movements returned.

On July 12th the child is better; the mother says that some days the head is like that of other children for three or four hours at a time. The head-movements are indisputably less frequent; nystagmus was observed twice in ten minutes. The child has no teeth as yet.

In this instance we have a somewhat rachitic child, with lateral head-movements and an occasional short, sharp twist of the head toward the right side. A horizontal nystagmus exists simultaneous with the head-movements and in the same direction. The child improved, but so far recovery is incomplete.

CASE III.—Heyman K., aged ten months, healthy until five months old, when he had a fever which lasted a week, and in the course of this week he had one convulsion; since that time he has been well. One other child of the family has rachitic paraplegia. The patient is breast-fed. The derangement of head and eyes has existed two months. On April 10th examination showed a large square head, the fontanel large, the jaw quite square, but an absence of teeth; the ribs are beaded, the abdomen large and very tympanitic, the glands at the angle of the jaw enlarged. Head-movements exist as in Case I, that is, both rotary and nodding; the child holds his head slightly to the left side; bandaging has the same effect as in previous cases. The nystagmus is horizontal and vertical, not very rapid, can be counted readily, and is most marked on deviation of the eyeballs to the right or to the left—what is known as external nystagmus. Extreme deviation to the right causes incessant movements of the eyeball, that of the right eye being the more rapid. There is a tendency toward rolling the eyeballs upward and to the left, and when this occurs there is no nystagmus. The experiment with the candle, bell, and apple show an increase of the nystagmus on looking forward, while on looking downward the vertical nystagmus only is more frequent. Here again head-shakings and nystagmus may be independent of each other. The pupils react perfectly. The child was seen regularly. In May the first two teeth appeared; no improvement followed. On June 18th the child was observed lying in his cradle, the head rotating from side to side the same as when in a sitting position. He was laid back in his bed repeatedly, but this did not occur again. On July 12th the child's condition was unchanged.

We have here a child with slight rachitis and giving a history of convulsions, who inclines his head slightly to the left side, and also showing the rotary and nodding movements. The eyeballs tend to roll upward to the left, while there is also a horizontal and vertical nystagmus, the former augmented by deviation of the eyeballs, especially to the right, always a more rapid nystagmus of the right eye, while the vertical nystagmus is more marked when the eyeballs are rolled downward. The movements of head and eye may or may not be simultaneous. On one occasion lateral head-movements occurred when lying down.

CASE IV.—Sam D., nine months old, was visited the first time in April, 1894. The mother is very delicate. When pregnant with this child she had malarial fever during the last six months. The child was born asphyxiated, but was resuscitated in a few minutes. The patient was nursed by the mother. The child is microcephalic, the development being arrested in every respect; child is about the size of a baby one month old. The fontanel is closed; a peculiar sharp angle is formed in the middle of the forehead by the union of the frontal bones; there are no teeth; the ribs are beaded. The child cannot hold its head erect. The head falls back in a position of extreme extension, while at the same time there are rotary movements. These movements are arrested when the child is blindfolded. The eyeballs follow the light, bell, and apple, when held above the eyes, but do not follow to the side or below. Very rapid nystagmus occurs for a few seconds about once in ten minutes, is always horizontal, and unaltered by forcibly restraining the head. This child was seen three times, the condition remaining always the same. Unfortunately, it was lost sight of, owing to change of residence.

This was a microcephalic child, slightly rachitic, with the head in a state of constant extension, with rhythmic rotary head-movements, and no nodding; there was an exceedingly fine occasional horizontal nystagmus. The condition remained unimproved.

CASE V.—Joseph T., aged eighteen months, was seen on May 26, 1894, for the first time. A negative family history was elicited. The child was well until three months old, when he had pneumonia, from which he recovered fully, and which was followed by a second attack when six months old; since that time he has never been strong; his first tooth appeared when one year old; there is no history of convulsions. During the last few weeks he has been attempting to walk. Examination shows the child to be very pale; he has fourteen teeth, showing rachitic ridges and discoloration; the abdomen is large; the epiphyses of the wrists and ankles prominent. Three months ago the mother noticed that the child held his head to the left when looking at distant objects; about two months ago he fell from his chair, and several days after this head-movements were observed; the eye-disturbance had not been noted by the mother. The condition was as follows: the child was sitting in a high chair, and the head held to the left side as he was looking out into the shop. There are side-to-side movements of the head, but no nodding; the rhythm was about as in the other cases. This movement is increased when attention is directed to objects at the further end of the room; blindfolding corroborates former results. The nystagmus is oblique, downward, and to the right, is exceedingly slight, in fact almost imperceptible, and, as a rule simultaneous with the head-movements. The trial with the candle, bell, and apple shows the movements, and the nystagmus increases when objects are at a distance about on a level with the eye. Forcible fixation of the head is without effect. In this instance also the living-room

is wretchedly lighted, a gas-jet is kept burning low all day, summer and winter. The child was taken up and put down in his chair several times. After a few seconds the symptoms returned, together with the peculiar position of the head; it was found that this attitude was necessary in order that the child might watch his father at work; this was also the position in which the nystagmus was most marked. The patient was seen a number of times; there was no change. On June 19th he was very restless, his skin was hot, the temperature per rectum 101°, and the symptoms the same. The child was taken ill a few days later, and died July 11th. The cause of death was not known.

This was a poorly nourished child of moderately rachitic development, holding his head to the left. A traumatic history was given, with subsequent observation of lateral and up-and-down head-movements; the rotary oscillations of the head were more noticeable when the child fixed his gaze at distant objects; in addition, a fine oblique nystagmus downward and to the right was found, and this was increased when the eyeballs moved to the right. Head-movements and eye-movements occurred independently of each other. The patient remained unimproved.

CASE VI.—Eddie H. was first seen December, 1893; the six other children of the family are rachitic. This was a bottle-fed baby and never has been strong. The mother first noticed the nystagmus in his third month, and the movements were then so rapid that the mother said it made her dizzy to watch the motions. They have continued ever since, although at present they are less marked than at first. When the child was about six months old the mother noticed the peculiar position in which he held his head. Shortly after this he had pneumonia, followed by diarrhea and complicated by convulsions. He had four or five seizures in as many days. His condition in May, 1894, when aged twenty months, shows a markedly rachitic child; the parietal bosses are prominent; he has twelve teeth; the epiphyses are very large, both of the wrists and the ankles; there is marked curving of the tibiæ; the ribs are beaded and the abdomen is large; the child is just beginning to walk. The head is moved to the left in a jerking movement when he wishes to look at any object, while at the same time there is marked vertical and occasional horizontal nystagmus; every now and then the right eyeball only seems to move. Bandaging and experimentation give the same results as in the other cases. The nystagmus was observed once or twice when the child was lying in his crib. On July 18, 1894, the condition was the same.

In this case we have a history of eclampsia in a markedly rachitic child and long-standing nystagmus. The head-movement consists of a jerking to the left, that is, a slight rotary movement. The nystagmus, on accommodating, is vertical and horizontal, exceptionally in one eye only. The nystagmus was noticed when the child was lying down. On July 18, 1894, the patient remained unimproved.

It will be noted that no ophthalmoscopic reports are made; attempts were made, but the patients failed to report at the dispensary. Such examinations were made in the cases of Mackenzie, Norrie, Caillé, and Hadden, but were of negative value so far as throwing any light on the etiology of the affection.

In every case cited there were head-movements, always rotary, in some instances also nodding; the former were by far the more frequent. Not once was there nodding exclusively. The head-shakings were augmented when the child fixed with the eyes at a distance, and were discontinued when the child was blindfolded. On one occasion only were the head-movements observed when the child was lying down. The nystagmus was always much more rapid than the head-movements, and varied in type, being horizontal, vertical, and oblique, the first form predominating, that is, the eye-movement being in the same direction as the rotary head-movement. Although, as a rule, head-movements and eye-movements were synchronous, occasionally they were independent of each other, or one slightly preceded or outlasted the other. In Case I the nystagmus was observed some days after the head-oscillations were no longer noted. In two cases movement of the globe of the right eye was the more rapid. Extreme deviation to the right caused increase in rapidity and constancy of the horizontal nystagmus in Case III, while in the same child, looking downward had a similar effect on the vertical eye-movement. In no instance did forcible restraining of the head affect the nystagmus; this is contrary to the observations of Dr. Hadden.

The presence of rachitis in every instance might be looked upon as indicating the predisposition of rachitic children to this as to almost any of the nervous disorders of infancy and childhood. Although but one patient had marked symptoms, rachitis was found to a greater or less degree in each case. This coincides with the reports of Dr. Mackenzie and Dr. Caillé, as well as with that of Dr. Hadden, who found it frequently in his second series of cases.

The family histories were negative; a personal history of convulsions was noted twice. Dr. Hadden speaks of a peculiar form of unconsciousness simulating a mild kind of epilepsy as occurring frequently; nothing of the kind was found among these cases. The children were of average intelligence.

Henoch mentions teething as a cause of this disease, but this seems coincidental rather than causal; the age at which derangement occurs covers

the period during which dentition is very active, and one would, therefore, expect the eruption of a tooth from time to time. In the case of Heyman K., two teeth appeared in June, and yet there is no improvement of the condition. On the other hand, Jennie S. is decidedly better, but has not a single tooth. Case V had fourteen teeth when the disturbance was observed for the first time.

Traumatism as a cause has been mentioned by several clinicians. Twice in the foregoing series was such an etiology traceable. In Case I a second fall during convalescence resulted in a partial relapse.

It may also be possible that the nystagmus is due to eye-strain. Dr. Hugo Magnus has recently reported a case in which the nystagmus was traced to the continued strained upward position of the eyeballs, the child having formed a habit of staring at the gas-fixtures directly over his bed. Case V, in which the child habitually kept the head in a particular and strained position, is like the case of Dr. Magnus, with the difference that in Case V the eye-strain was sideways and in the other instance upward.

It is desired, however, to call especial attention to the fact that in Cases I and V the living-rooms were most wretchedly lighted. It was found necessary to have a gas-jet burning at midday on a bright summer day if any work was being done. The mingled daylight and the gaslight gave a most imperfect and dim illumination at best. In so far as nystagmus as found in adults, most frequently in miners, is ascribed to the poor light in which they are obliged to work, it seems that here we may have an analogous condition acting as an exciting cause. In Case I, as the weather grew milder the mother took the child out in the open air; this was strongly advised. The child has steadily and rapidly improved. In Case V the mother could not find time to do this.

The probable direct etiology of this combined head-movement and eye-disturbance was pointed out by Henoch and by almost every observer since —namely, that the root-nuclei of the nerves that supply the affected muscles of the throat and neck lie in the immediate proximity of the nuclei of the ocular nerve. Any disturbance of the roots of one set might most readily affect the other. Preyor states that associated head-movements and eye-movements occur as early as the tenth week, but that not until the ninth or tenth month do they become rapidly, easily, and correctly associated. We should, therefore, expect a derangement of function most liable to occur while the function is being perfected, as was the case in the foregoing series.

The treatment resorted to by Dr. Caillé, namely, bandaging of the eyes, was based on the fact that blindfolding caused a cessation of the movements. It stands to reason that motion must cease, for in blindfolding these children they are deprived of the purposive association of head-movement and eye-movement, which light and the sense of space render possible. Improvement occurred in both of his cases in several months. Whether this was due to the procedure adopted or to the accompanying tonic treatment may be considered a moot question. Dr. Hadden, on the principle that he was dealing with an epileptoid condition, gave potassium bromid with varying results; he likewise gave tonic treatment.

We are, in these cases, dealing with a functional nerve-disturbance due to any one, or possibly to all of the causes mentioned. We have a child that shows diminished nerve-resistance, or, to put it in another way, which shows increased nerve-irritability, for which the rational treatment is a careful attending to the details of personal hygiene, especially food, sleep, and exercise. The drug-treatment, if any be given, should be directed against the rachitis; for this some stable, easily-assimilated form of phosphorus is advisable.

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321 EAST TENTH STREET.

THE NEED OF REST IN THE TREATMENT OF HIP-DISEASE.[1]

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THE object of this paper is to present upon some new and upon some old grounds a brief plea for the greatest obtainable rest to the joint in any treatment of hip-disease, whatever it is, and to point out how this maximum amount of rest may be obtained. It will be sufficient to state that I am a believer in the use of strong traction in the treatment of hip-disease, on the ground that it distracts the joint-surfaces; but that traction is in my opinion only a part of successful treatment. To some often-neglected factors I beg in the present paper to call attention, without discussing the general question of

[1] Read by title before the American Orthopedic Association, at Washington, May 30, 1894.

the treatment of the disease. The measures to be advocated are local and general. Among local measures the treatment of hip-disease by the long traction-splint (the Davis, Taylor, Sayre splint) is probably the most common method now in use in America. Sometimes this is in connection with the use of crutches, but more often without them, the child being allowed to walk upon the splint, which thus becomes a perineal crutch. Assuming what is generally allowed to be the case by all surgeons, that a diseased hip-joint should be protected from unnecessary jar and traumatism, it becomes of practical importance to inquire whether such traumatism occurs when a patient with hip-disease is allowed to walk upon a traction-splint, or whether the traction-splint is sufficient protection to the diseased hip under these conditions. It may be seen when one observes a child with hip-disease walking upon a long traction-splint that a slackening of the traction-straps occurs when weight is borne upon the diseased leg. The entire weight of the patient comes directly upon the perineal straps and the structure of the splint, and tends to diminish traction every time that the bottom of the splint touches the ground. It is obvious that unless the apparatus is absolutely rigid from a mechanical point of view this must occur. Intermittent traction upon the hip must thus occur, the femur being allowed to slip back against the acetabulum when the patient's weight is borne upon the splint and traction is diminished. Leaving theoretic considerations, however, aside, the following experiments were undertaken to show what practical effect, if any, is produced when weight is borne upon the long traction-splint in walking.

Into the webbing of the ordinary hip-extension two small registering spring-balances were inserted, and the long traction-splint was applied in the usual way. Traction was then applied to the hip. The amount of traction was shown accurately by the balances, which formed part of the extension-straps through which traction was made upon the hip.

Experiment I. Girl, six years old, with hip-disease; traction of 7 pounds shown by balance; standing on splint reduced it to 5½ pounds.

Experiment II. Girl, ten years old, with hip-disease of four years' duration; traction of 6 pounds; standing on splint reduced it to 5 pounds.

Experiment III. Girl, eight years old, hip-disease (slight); traction of 15 pounds; standing on splint reduced it to 8½ pounds; walking lowered it to 7 pounds; after ten minutes without walking or standing traction had been lowered to 11 pounds.

Experiment IV. Boy, six years old, hip-disease of one year; traction of 18½ pounds; standing on splint reduced it to 15¾ pounds; walking on splint reduced it to 11¾ pounds; after ten minutes traction had been lowered to 13¼ pounds.

Experiment V. Boy, eight years old, hip-disease for two years; traction of 18 pounds; standing on splint reduced it to 12 pounds; walking on splint reduced it to 9½ pounds; after ten minutes of walking and sitting the traction was reduced to 13½ pounds.

The experiments need very little comment. They simply show that at one time the head of the femur is pulled away from the acetabulum by a certain force, and the next minute by perhaps half that force. This intermittent pressure of the head of the femur against the acetabulum induced in this manner is in a smaller way the same process, so far as the hip is concerned, as walking upon the leg directly, a constant series of traumatic impacts being induced. This fact has often been alluded to, but has not I think, been demonstrated by actual experiment.

Without entering into the merits of those splints, with the aid of which it is attempted to fix the hip-joint by rising above the pelvis and grasping the thorax by a rigid arm, it may be stated with regard to the long traction-splint that its use as a walking-splint cannot be otherwise than imperfect, compared to its use as an instrument to produce steady traction. That intermittent pressure exists is demonstrated; that intermittent pressure cannot do good, and may do harm, seems obvious. Some writers believe that motion of the hip-joint within small limits is beneficial during hip-disease. None, however, could advocate on any scientific ground that a constantly varying traction-force could be of use. If this intermittent traction were a difficult matter to avoid it would not be worth while to spend so much time in its discussion; but the use of a pair of crutches and a high shoe on the well foot does away at once with the whole difficulty.

The matter of fixation has not been considered in this connection; the question has been purely one of traction.

As regards general measures, it may be said that hip-disease is, in most cases at any rate, a tuberculosis of bone. Like many forms of local tuberculosis it is attended with general symptoms. Among the earliest in most cases may be sudden loss of flesh, failure of appetite, and high temperature. The latter is definite and easily studied, and as a symptom relating to the general condition of the patient is of interest in the present connection.

Some years ago I called attention to the significance of the importance of high temperature in chronic joint-disease. At that time I had not a very extended series of observations, but now I am able to generalize from some 1050 observations of the afternoon temperatures of children with hip-disease and Pott's disease. For analysis there were taken from my notes at random records of 250 cases

of hip-disease. The temperatures were taken bebetween three and five in the afternoon at the Surgical Out-patient Clinic of the Children's Hospital. The same thermometer was used, and every care was taken to make the observations accurate and uniform, the rectal temperature being observed. The observations on temperature in hip-disease have covered a period of four years and are several hundred in number. They include routine cases taken as they came to the clinic, and no cases were omitted. The cases were under ambulatory traction-treatment. In the group of 250 observations which were analyzed the temperatures were as follows:

Temperature between	Per cent.	Number of cases.
98° -98.9°	13.6	34
99° -99.4°	26	65
99.5°-99.9°	18	45
100° -100.9°	33	84
101° -101.9°	7.2	18
102° -103°	1.6	4

Studying the temperature as applied to individual cases there was no question that in severe cases the temperatures were higher than in mild ones. As a prognostic indication the temperature was of much use in the early stages, because, as a rule, cases which later proved to be severe began with a temperature of 100° or more. On the contrary, cases with a mild initial temperature as a rule did well. The occurrence of a sudden rise of temperature in a convalescent case often indicated an approaching relapse. In general, the severer the case the higher the temperature. High temperature is an early symptom coincident with the initial muscular spasm.

But what is of especial interest in this connection is the fact that the temperature in the evening is lowered in most cases by confinement to bed. It has been demonstrated very often in my experience that a child attending the out-patient department has had for weeks a temperature in the afternoon of 100° or more, but that when deformity or other symptoms which necessitated confinement to bed have arisen the temperature has fallen to normal or to 99° within forty-eight hours after confinement to bed. All, I am sure, will agree that in routine hip-disease without active suppuration a high temperature is not often to be seen in hospital-wards. A similar series of charts in an out-patient department would show a noticeable rise of temperature in the great majority of all cases, mild and severe.

In the same way a restriction of the child's activity by enforcing periods of recumbency during the day will in most cases lower the temperature, although generally not to the normal. I have observed this repeatedly, and more often of late when I have been adopting this limitation of activity as a routine measure in all but the mildest cases. Unfortunately, the routine observations of temperature were abandoned some time ago, so that no extended series of figures bearing upon this subject can be given.

Putting aside, however, the demonstrable fact that this subsidence of temperature does occur under recumbency, as shown in the observations already quoted, the benefits of restricted activity can be called to the attention in another way by noting how often it is that patients with tuberculous bone-disease who are being treated by ambulatory methods improve temporarily in flesh, appetite, and spirits when confined wholly or partly to bed.

Although as far removed as anyone from wishing to advocate the treatment of hip-disease by recumbency, I would beg to call attention to the conclusions to be drawn from the facts presented in favor of restricted activity, on the ground that high evening temperature is present in nearly all cases of tuberculous hip-joint disease, and that this high temperature is in most cases diminished by partial recumbency. The system that I direct as a routine in mild cases is very simple. The child stays in bed until nine or ten o'clock in the morning. An hour's rest on the back is insisted upon during the morning and two hours of recumbency in the afternoon. The child goes to bed early in the evening, generally at seven. For severe cases longer periods of rest would be prescribed. No ambulatory apparatus is perfect, and it is obvious on general principles that a child with hip-disease cannot without harm indulge in the incessant activity of other children.

The measures that I advocate in connection with any treatment, whatever it may be, are the routine use of crutches and a shortening of the active period of the day, both of which should be adopted for the purpose of securing increased rest to the joint.

THE TRAUMATIC ORIGIN OF ERYSIPELAS.[1]

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LONG before the inception of the microbic theory of infectious diseases erysipelas was known to be contagious, as was the fact that wounds of the skin in certain localities and under some circumstances were liable to be followed by this affection. That eminent clinician, Trousseau,[11] declared years ago that infection was only possible through an external wound or abrasion. The results of modern bacteriologic

[1] Read before the Milwaukee Medical Society, February 13, 1894.

investigation corroborate this excerpt from ancient literature, but examination of classic literature of recent date does not show that the fact is even yet firmly established. We still read of "idiopathic" and "traumatic" forms. Senn[9] called attention some time ago to the fact that infection may arise through a mucous membrane. Yet writers on special pathology are strangely silent upon the subject of the disease originating within or infecting cavities lined by mucous membrane. Most of the cases that I have seen within late years have arisen in this manner.

The specific cause is considered to be the streptococcus erysipela is, Fehleisen,[3] (report published in 1883), or the S. pyogenes, Rosenbach[8] 1884, Passet[6] (1885), of which I have specimens under the microscope, taken from several sources. (S. pyogenes, kindly lent me by Dr. V. A. Moore, Department of Agriculture, Washington, D. C.; S. erysipelatis, prepared by Dr. H. B. Hitz, of Milwaukee.) Later writers (Eiselsberg,[2] Paret,[7] Lungelsheim,[5] Sternberg[10]), believe that these are simply varieties of the same species, that both may exist together and with other pus-microbes, and that there is no antagonism of species. Clinical evidence supports the view that under certain circumstances one predisposes to infection by the other (see Case V), and even that the original source of infection may be so modified by its environment as to give rise to distinct clinical pictures. Thus infection by erysipelas may, in one person, or in one portion of the body, produce typical erysipelas, and in another an acute suppurative process, while in a third the two conditions may coexist or follow one another. Such varied manifestations are commonly observed in phlegmonous erysipelas, and may be traced in such complications as suppurative otitis, etc. (See Cases I, II, III, V, IX.) It is possible that microorganisms may be modified by their surroundings, and take upon themselves the characteristics of other forms, the poisonous products of their metabolism giving rise at different times to varied specific effects and different diseases. Our present knowledge of the evolution of disease renders this theory tenable. Bumm and Widal[1] show that when the streptococcus is constrained to lead a saphrophytic existence in test-tube culture it loses its virulency, and Sternberg[10] evolves from this statement the deduction that the rarity of infection of puerperal cases is largely due to attenuation of pathogenic power, as the streptococcus is often found in the healthy mucous membrane of the vagina, fauces, nose, etc.

Hajek[4] (1886) and von Lungelsheim[5] (1891) state that the morphologic processes of the S. pyogenes and S. erysipelatis are similar, although their morbific qualities are different. The former is pathogenic for both mice and rabbits, while the latter is lethal to rabbits only.[5] The S. erysipelatis is said to occupy only the lymph-channels, its inoculation producing a superficial migrating dermatitis, while the S. pyogenes penetrates the tissues more deeply, travels beyond the lymphatic system, producing intense inflammation in the depth of the tissues. The latter is seen both in the lymphatics and around the bloodvessels, and often in their lumen.[4] As my subject limits me to narrow grounds, I simply refer in passing to the fact that lowered conditions of bodily health and certain toxemias (alcoholism, septic infection, etc.) predispose to this disease as well as to other troubles, by diminishing the resisting-power of the tissues.[10]

The various inoculation-experiments show that the germ must be deposited under the superficial layers in order to gain entrance to the lymphatic vessels[9, 10]. No infection can result from contact of the virus with sound skin or mucous membrane.[10] There must be a crevice in the armor into which the poison can creep. A wound of entrance always exists, but in those cases in which no solution of continuity has been observed it has been either so trivial or so small as to escape the attention of both patient and physician. The face and hands being more exposed to injury than other parts, explains the relative frequency of erysipelas in these localities. During the past five years my experience has been confined to cases incidental to other affections, or occurring after operations, the latter one of the most annoying of complicatlons, and to which few surgeons are strangers. All of my cases were of the facial form, and upon due inquiry the starting-point in all instances was seen to be a local lesion, and in nearly all the original infection could be traced to some other case or to auto-inoculation.

CASE I.[12]—Contagion arising from abrasion in the anterior nares in a patient who was in the habit of picking the nose, and who has visited and nursed an erysipelatous patient in the neighborhood. Dr. Thomas Hay called me in consultation on account of acute suppuration in the left middle ear, occurring after extension of the erysipelas to the nasal membranes and naso-pharynx. Recovery took place after one relapse. Microscopic examination of the ear-discharge revealed several forms of pus-cocci, among them the S. pyogenes.

CASE II.[12]—Contagion arising in the naso-pharynx, occurring after removal of an adenoid growth, forming an abscess in the pharynx, the inflammation extending to the middle ears, through the nasal and buccal cavities to the face and scalp, and down the neck to the shoulders. Suppurative otitis media occurred. The general treatment was directed by Dr. W. H. Washburn. It was a most severe case, attended by one relapse. Recovery followed.

CASE III.[12]—Beginning in an abrasion of the

mucous membrane of the lower lip in a pipe-smoker, extending through the buccal cavity to the nasopharynx, through the Eustachian tubes to the middle ears, causing suppurative disease. Extension took place over one side of the face and scalp. No history of contagion was obtained. The general treatment was directed by Dr. W. F. Miller. Recovery followed.

CASE IV.—This man was receiving hypodermatics of strychnin for simple atrophy of the optic nerves. After about a dozen injections in the temples (needles presumably disinfected and reserved for him alone), a swelling was noticed which had existed several days when a diagnosis of hypodermatic abscess was made. For this condition I felt responsible until I afterward found out that the man was in the habit of frequenting a house in which there had recently been erysipelas. The temperature rose rapidly, and my consultant, Dr. F. E. Walbridge, concurred with me that the trouble was septic infection, but on the morrow, after the patient was safely ensconced in the hospital among other special surgical cases, I was dismayed to discover that the trouble was undoubted erysipelas. The roseola extended over one side of the face, but the man made the usual recovery.

CASE V.—This man had been lying in the next bed to the previous case before a diagnosis of the specific nature of the former had been made, and before he had been isolated. Seven days before I had opened the mastoid for caries. Erysipelatic inflammation began under the bandages in the site of incision, and extended over the scalp. The case proved phlegmonous. The temperature was very high. Recovery ensued.

VI.—For a number of days I abstained from operating, and kept away from personal attendance upon the two foregoing cases, until, believing that I was well disinfected, I extracted a cataract for an old woman in a room on the same floor, but nearly one-hundred feet away from the one in which the other cases were sequestered. On the fourth day thereafter we found unmistakable signs of erysipelas in an abrasion of the skin at the external angle of the eye *not* operated upon. Extension of the roseola to the cheek followed. It was a light case, with recovery.

CASE VII.—A scrofulous child, with erosion of the anterior nares and upper lip from purulent rhinitis appeared one day with a swollen face, and was sent to Dr. Louis Frank, who diagnosticated erysipelas. Recovery followed.

CASE VIII.—The patient was an old man, whose nasal passages had been occluded for years by an enormous number of polypi, the operations for which were made daily for about a week. Considerable malodorous purulent discharge followed. After attempted disinfection the galvano-cautery was used, and two days later erysipelas appeared in the nares, extending over the face. Recovery ensued.

CASE IX.—This patient sat in the waiting-room of my office for a couple of hours, in the next chair to Case VIII before the diagnosis of erysipelas was made. For some obscure reason he had placed a large fly-blister on his forehead, which in consequence had become very sore. Two days later he appeared with swollen face and eyelids, and the condition developed into erysipelas. The patient was sent to Dr. William Meyer for general treatment. A number of localized abscesses appeared about the face and forehead about a week after the roseola had disappeared. Recovery followed.

The clinical history of these cases, taken in order of occurrence from my case-book, substantiates the various pathologic investigations, showing that in all instances of erysipelas there must be a wound of entrance. Several of them illustrate the fact that the contagion of erysipelas does give rise to pus-formation, and that infection from other sources may cause erysipelas.

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CLINICAL MEMORANDA.

ONE CASE OF COMPOUND DEPRESSED FRACTURE OF THE SKULL AND ONE OF A BULLET-WOUND IN THE BRAIN.

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ALMOST every personal experience should be of interest to us all, inasmuch as it may clear up some doubtful point and produce a clear mental picture of what is the best treatment in subsequent similar cases; moreover, familiarity with similar cases better prepares one to undertake measures in their management which one would shrink from doing were they few or seldom reported. Timidity and conservatism in surgery are accountable for many deaths; especially is this true in places remote from the large cities and hospitals. It is, however, gratifying to reflect that now these conditions obtain less than formerly, since antisepticism and improved technique are on a scientific basis. It is mainly for the purpose of emphasizing the facts alluded to that this case is reported.

On June 13th of the present year, at about 1 o'clock P.M., Fred D., eleven years of age, well developed and of healthy parentage, on going into the barn was kicked on the left side of the head by a mule. His father hearing the noise, hastened to the barn, lifted up the boy and carried him to the house, where I saw him about an hour after the inception of the injury. He was then in a semi-

conscious condition, but would answer questions on being aroused; the pupils were of equal size and reacted to light. There was no noticeable paralysis, but especial examination was not made to determine accurately as to the existence of paralysis or paresis. Inspection showed a two-and-one-half inch elliptical scalp-wound, one-and-one-half inches to the left of the median line and one inch behind the Rolandic region, with its convexity outward and forward, and a depressed fracture of the left parietal bone. The condition of the parts was explained to the parents, and operation to relieve the pressure advised, which was assented to. It was noticed that the symptoms of cerebral compression were increasing, and on two or three occasions convulsions seemed imminent.

The field was prepared for operation by washing with soap and water, then shaving around the wound for two or three inches (his hair was very short, having been cut on the previous day, and for this reason a larger area was not shaved) after which it was washed thoroughly with an antiseptic solution.

Under chloroform-anesthesia the scalp-wound was enlarged by carrying the incision toward the median line, thus making a flap which could be reflected and the fracture exposed. The bone was depressed about three-eighths of an inch below the external surface of the outer table; it was about three-fourths of an inch wide and one inch long, and beveled at the expense of the inner table. The depressed portion was comminuted and was wedged so tightly that it could not be elevated without trephining or otherwise enlarging the opening. Bone-gnawing-forceps was used in preference to the trephine, as less bone would thus be sacrificed. The depressed fragments were now loosened and removed; considerable force was required to separate the bone from the dura. The dura was of a bluish-white tint and uninjured. Pulsations were perceptible. The sharpened edges of the bone were rounded off, the parts thoroughly irrigated, a small drain of iodoform-gauze placed in the wound, and the scalp-wound closed with interrupted silk sutures, the ordinary antiseptic dressing applied and the boy put to bed in good condition.

At 7.30 P.M. the temperature was 99.5° and the boy was resting well, excepting for a little pain in the head and soreness from bruises on other parts of the body, received at the same time as the head-injury. At no time during the period of convalescence did the temperature rise above 99.5°; it was normal after the first three or four days.

The scalp-wound healed by first intention, and there was no suppuration except from a stitch-abscess; the drainage-gauze was removed on the second day, but as a small quantity of limpid fluid collected each day, a small wick of gauze was put in at each daily visitation, until June 28th, when the wound was allowed to close. Recovery was rapid and uneventful.

I believe that all depressed skull-bones should be elevated, and especially if the outer surface of the external table is on a level with or below the visceral surface of the inner table, even if no symptoms of compression or irritation are present; for subsequent trouble, such as severe headache, mental hebetude, or even epilepsy and insanity, often ensue from the irritation of the depressed bone.

The adage that "misfortunes never come singly" seems to be verified in regard to fractures of the skull for this locality—the case just reported being the fourth that has come under my observation within the last few months.

The first of these cases, seen in consultation, was remarkable, inasmuch as the majority of cases of like severity generally prove fatal in a few minutes. The patient, a healthy and well-developed man of about thirty-five years, was shot about two inches behind the left ear with a thirty-eight caliber revolver, on September 9, 1893, the ball passing a little upward and forward through the brain, and glancing when it reached the opposite side of the skull. The man was unconscious for several hours and semi-conscious for two or three days.

Immediately after the injury the wound in both the scalp and the skull was enlarged and fragments of bone and foreign objects removed. Search was made for the ball, but without avail. The nozzle of a syringe was introduced along the tract of the ball for the distance of six inches, and the parts well irrigated, after which the wound was lightly plugged with antiseptic gauze and the man put to bed with an ice-cap to his head.

The shooting occurred early in the morning, and in the evening at 9 o'clock another unsuccessful search was made for the ball, after which the tract was again irrigated and plugged with antiseptic gauze and the ice-cap applied. At the time of and before both these operations considerable brain-substance escaped; two ounces, I think, constitute a low estimate of what was lost.

The parts healed by granulation, and recovery was slow but uneventful. No sequelæ remained to locate the ball, and the only evidence that the brain had been injured was some impairment of hearing and of visual acuteness, both of which gradually improved up to the normal or nearly so.

The man is at present doing manual labor and is in perfect health, notwithstanding the fact that he carries a bullet somewhere in his skull-cavity, from which he suffers no inconvenience.

A CASE OF DIPHTHERIA TREATED WITH THE ANTITOXIN.

BY ARNOLD W. CATLIN, M.D.,
OF BROOKLYN, N. Y.

ARTHUR H., aged nine years, first complained of being unwell Saturday, October 6th. There was general malaise; the child was feverish and debilitated; there was loss of appetite, and he was disposed to maintain a recumbent posture. He was first seen on Sunday morning, October 7th. Debility was extreme, the skin hot and dry; the temperature 102°, the pulse 120. The tongue was coated and the breath very foul. Examination of the throat showed a mass of exudation completely filling the fauces, and nasal breathing was obstructed. Diphtheria of a low type was diagnosticated. He was put upon the mercuric chlorid, gr. 1/40, and tr. ferri chlor., ♏v, every three hours, and the throat was sprayed hourly with a weak solution of mercuric chlorid. He was nourished with whiskey-punch freely, and a culture-tube was immediately forwarded to the Board of Health.

I secured five grams of the antitoxin (Aronson's *Heil-serum*), and gave the whole amount in one hypodermic injection between the shoulder-blades, according to the method used in Berlin, and explained by Dr. Louis Fischer, of New York. This was at 7 P. M., Sunday, when the disease had been present certainly forty-eight hours, and probably, in view of the fact that so much surface was involved by the exudate, for seventy-two hours, although no attention was called to the throat by the patient until the morning of the day the antitoxin was used.

No reaction followed the hypodermic injection. The patient passed a restless night, and was found no better on Monday morning. The report from the Board of Health as to the culture was: "True diphtheria." The cadaveric odor from the throat was almost intolerable. The heart's action was weak, and debility was even more pronounced than on the previous day. The temperature was from 100.5° to 102°; the pulse was 120 and feeble. The child positively refused stimulants in any form by the mouth. The condition of the throat made deglutition difficult. The appearance of the exudate was about the same as at the time of the injection the night before. Continuance of treatment was directed, with the constant use of hot brandy to the surface, and hot brandied cloths to the abdomen continuously. On Monday evening no progress was noted, and the case was assuming a grave aspect. The prognosis was unfavorable, and the new remedy was considered *inert*. On Tuesday morning, thirty-six hours after the use of the antitoxin, there was an evident change for the better. The temperature had fallen, the pulse was stronger, the tongue cleaner, and the exudate was loosening at the edges, and the surrounding parts looked bright and healthy. The improvement continued throughout the day. There was a free flow of saliva and mucus from the throat, but no membrane exfoliated. It appeared thinner, and was evidently disappearing.

The child was more comfortable that night, and evidences of gain in every way were noted on Wednesday morning. The temperature was nearly normal, the pulse 86, the odor from the throat nearly gone, and the membrane was rapidly disappearing. The underlying surface could be seen, and the whole appearance was fresh and healthy. No masses or flakes of membrane were loosened or coughed up. It all appeared to be melting away. On Thursday the temperature touched normal, the pulse was 86, the throat was nearly clear, and the nasal passages were much freer. The patient declared himself well, and his general tone was certainly excellent. He was hungry, and called for solid food. His urine was examined and found free from albumin. On Friday all the visible part of the throat was free from exudate, the tongue was slightly coated, but moist at the edges, the breath was entirely free from odor, the temperature ranged from 97.6° to 99°.

The report on the cultures, taken Thursday, was that the "Klebs-Loeffler bacilli were still present." On Saturday the child was, to all appearance, well; the throat was normal, and the nasal passages clear. All evidence of the disease had disappeared; and the temperature averaged normal. He had a royal appetite. On Sunday, one week from the date of the use of the antitoxin, the child would have been declared quite well if the report on the culture had not read "bacilli still present." I kept the child in bed and quarantined for the ensuing week, and on the eleventh day sent cultures to the laboratories of both the New York and Brooklyn Boards of Health to secure comparative tests. Reports from both read, "bacilli present." Persistent nutrition was kept up, and the throat sprayed with Seiler's solution and mercuric chlorid alternately.

Cultures made on the seventeenth day showed bacilli still present, but I had been unable to detect the slightest evidence of the disease since Saturday, October 13th, six days after the use of the antitoxin. Unfavorable reports from the Board of Health continued until the twenty-first day, when the cultures were declared free of bacilli. An intercurrent attack of follicular tonsillitis, however, again showed them present until the twenty-ninth day, when they had permanently disappeared.

No albumin was found during the course of the disease save on the eighth day, and then only a trace.

This case has been of great value as showing: first, the wonderful abortive power of the new remedy in dealing with this treacherous disease; and, second, as demonstrating its ability to limit the absorption of the diphtheric poison and so prevent the sequelæ so often seen and so fatal in a certain proportion of those recovering from the acute or primary stage of the disease. I refer especially to the cardiac and renal complications.

The presence of the true diphtheric bacilli for twenty-nine days in cultures made from the throat, three weeks after all distinctive symptoms had disappeared, and the child was apparently well, is very suggestive.

It certainly emphasizes the wisdom of making cultures and the need of quarantining patients as long as an unfavorable report comes back from the Board of Health. Doubtless this is one explanation of the spread of this direful disease in our great cities, where the children herd together in our ward schools and infect each other during the period of convalescence, when, if cultures had been made, they would still be in quarantine and the mischief prevented.

AN INTRA-CRANIAL TUMOR.

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THE following case seems of sufficient interest to report, not because its presents anything unusual, but rather because it approaches the type. The patient, a little girl of seven years, with no family taint, came under professional observation in September, 1890. She had suffered from the usual diseases of infancy, and, in addition, had had a "swelling and breaking out" in the right submaxillary region, of which a small scar remains. In March, 1888, while attending the district school, she began to have attacks of vomiting, and to suffer from occasional attacks of severe headache. The neighbors noticed that she had a peculiar gait, and that she seemed inclined to reel toward one side.

Her mother states that she does not vomit like other children who are "sick at the stomach." During the past two months she has vomited on an average twice daily, and the headache after these spells of vomiting is

severe, the child throwing back her head and screaming with pain. In February, 1889, I saw the patient as she was walking through a long hall. She would reel toward the left, and recover herself, to again reel toward the left. At that time, when seated in a chair, she held her head backward, turned toward the left and slightly inclined toward the right. When gazing into vacancy both eyes were turned toward the right. Motion of the eyeballs was perfect in all directions. The pupils responded to light and in accommodation. The patellar reflex was present.

On September 20, 1890, the patient had not walked for six months. She continued well nourished. Seated in bed she rested her head against a support behind; she was mentally sluggish; a naturally bright face seemed to be clouded by a mask of stupidity. Motion of the eyeballs was not impaired, the pupils reacted to light and in accommodation; choked disc was present in both eyes. The girl counted fingers at fifteen inches with the right eye, at ten feet with the left eye. The circumference of the head was 22½ inches, and there was decided paresis of the left side of the face; the tongue when protruded turned toward the left. The child did not hear a watch on contact with the left ear, but heard the same at six feet with the right ear.

Both upper extremities were paretic, the left the more so, and ataxia existed in both. When placed on her feet the patient reeled or staggered, and would have fallen if not supported. Sensation to pain over the entire body was impaired, and conduction was slow. The patellar reflex was present. The sphincters of the bowel and of the bladder were both capable. As the patient lived ten miles in the country she was not seen again until April 29, 1891. The circumference of the head was 23¼ in.; the right pupil was dilated, and did not react to light; the left reacted slightly. The eyeballs were protruding; the forehead prominent. The girl protruded the tongue slowly. She passed urine involuntarily twice every twenty-four hours, and had no evacuation of the bowel without the use of a syringe.

At the autopsy, one week later, the circumference of the head was 23½ inches. The coronal suture was open; the skull was parchment-like in thickness, and the calvarium was removed in part with the saw and in part with scissors. In many places the convolutions of the brain were flattened, and the ventricles much dilated. The cerebellum was much increased in size, and contained a tumor located slightly to the left of the median line. The transverse and antero-posterior diameters each equaled 1¾ inches and the vertical diameter 1½ inches.

The tumor developed from the pia mater of the posterior fossa, and in its development it simply pushed the cerebellar substance before it, so that the cerebellum could be as easily lifted from the tumor as the operculum from the island of Reil. The inferior worm, the middle peduncle, the pons, and the medulla were most disturbed in function by the growth. The location and size of the tumor readily explain all the symptoms. Microscopic examination revealed a small round-celled sarcoma.

Prof. Ludwig Mauthner, who was but recently elected to the chair of ophthalmology in the University of Vienna, died suddenly on October 20.

MEDICAL PROGRESS.

Successful Operation for Suppurating Congenital Cyst of the Neck in an Infant.—CRIVELLI (*Australian Medical Journal*, 1894, vol. xvi, No. 8, p. 367,) has reported the case of a boy, four months old, who presented a large, soft, and fluctuating tumor occupying the posterior triangle of the neck. The tumor began to increase in size a few days after birth and rapidly assumed such proportions that to avert threatened suffocation, eight ounces of transparent and slightly yellow fluid were withdrawn by aspiration. The tumor refilled rapidly, and was aspirated a second time with strict antiseptic precautions. A third aspiration, however, was followed by suppuration of the cyst. When the child came under observation he appeared to be in a dying condition. The face was emaciated, the eyes sunken, the skin pale and wax-like, the body and limbs wasted, the pulse rapid and scarcely perceptible, the skin covered with cold perspiration, and the breathing rapid. The child also had rigors, was unable to take nourishment or to sleep, and presented a typical picture of septic infection. The tumor was quite subcutaneous and occupied the left posterior triangle of the neck, being bounded in front by the sterno-mastoid, which it overlapped and pushed to one side, and below by the clavicle and the first rib. It was almost as large as the child's head. It was not transparent, nor did it present pulsation, and no murmur could be detected. The overlying skin was red and painful and very thin at the apex, while the base of the tumor was surrounded by a margin of thick, edematous tissue. Extirpation of the tumor was decided upon as urgent, to be attempted as a last resource, in spite of the grave apprehension that was felt on account of the prolonged administration of an anesthetic to a child so young and so enfeebled. Ether was used to induce anesthesia, and the usual aseptic precautions were taken. A vertical incision, about three inches in length, was made downward in the skin over the apex of the tumor, and some six ounces of very thick, greenish pus escaped, which had no odor, but contained shreds of necrosed fibrous tissue. The cyst was unilocular, but exhibited traces of incomplete subdivisions. On introduction of the finger into the cavity a chain of enlarged glands was felt behind the sterno-mastoid, the most central of which was about the size of a walnut. The cavity was thoroughly emptied and washed out. A strip of skin was removed on each side of and parallel to the original incision, so as to facilitate the extirpation of the cyst. The cyst was universally adherent and its removal required most careful dissection to avoid injury to nerves and vessels. It extended upward almost to the side of the pharynx and to the greater cornu of the hyoid bone and a prolongation extended under the sterno-mastoid and was adherent to the glands and the sheath of the carotid vessels. This prolongation was so bound by adhesions and penetrated so deeply that its complete removal was not possible. The operation having occupied a considerable time, and as some uneasiness was felt on account of the weakness of the patient, the walls of the remainder of the cyst were now rapidly scraped with a sharp spoon and a drainage-tube passed to the bottom of the cyst. The wound was then quickly sutured and a strong solution of lysol injected through the tube, then dusted with

aristol and dressed with gauze and antiseptic wadding. The child was extremely weak after the operation, and rallied only after considerable stimulation. On the following day, however, the improvement was most marked. The dressing was changed for the first time on the second day, when the wound looked well and presented no pus. Two days later a small quantity of thick pus and some shreds of necrosed tissue escaped from the drainage-tube, around which the skin was somewhat reddened. Three days after this the drainage-tube and sutures were removed. Union had taken place except at the lowest part of the wound, from which a considerable quantity of pus was escaping. Eleven days after the operation some redness and swelling, with heat and tenderness, were observed an inch in front of the line of sutures at the level of the prolongation of the cyst and in the neighborhood of the carotid glands, which it had been impossible to completely remove. The skin here was hot and tender. A second incision gave exit to a small quantity of pus and a large piece of necrosed tissue of spongy consistence. A small drainage-tube was introduced into this new opening and the cavity was washed out at each dressing with a 5 per cent. solution of lysol. After this the amount of pus progressively diminished. The general condition of the infant greatly improved. He took the breast well, grew fatter, and slept well. Sweating ceased and the temperature fell to normal. The opening at the base of the line of stitches completely closed. Both of the drainage-tubes were gradually removed. Less than six weeks after the operation the child was completely cured, and in the course of the next few months he grew to be a large, strong, healthy baby, almost double his previous weight.

The Relationship Between Bovine and Human Tuberculosis.—SHERMAN and LAMKIN (*Medical Record*, No. 1247, p. 412) report the case of a boy, four years old, whose maternal grandfather had died of pulmonary tuberculosis, and whose nurse had about a year previously attended a daughter who also had died of pulmonary tuberculosis. The child had slight adenoid vegetations in the vault of the pharynx, and had suffered from two attacks of pneumonia, from both of which he had recovered entirely. When the boy came under observation he presented a spastic gait, frequently stumbling. Classic symptoms of meningitis, believed to be of tuberculous origin, progressively developed, and led to a fatal termination. Inoculation with tuberculin of three cows, from which was derived the mixed milk used by the patient, induced febrile reaction in two, and post-mortem examination in these demonstrated the existence of tuberculosis.

THERAPEUTIC NOTES.

The Effect of Creosote upon the Virulence of the Tubercle-Bacillus.—At the recent meeting of the British Medical Association, FYFFE (*British Medical Journal*, 1894, No. 1760, p. 644) read a paper detailing the results of an investigation undertaken with a view to determine whether the administration of creosote in the treatment of pulmonary tuberculosis is attended by a restraining influence upon the growth of the tubercle-bacillus, or by an improvement in the digestion, together with a better assimilation of food. The conclusions arrived at are summed up as follows: In cases in which creosote was given simply by inhalation, in addition to such drugs as cod-liver oil and the hypophosphites, no effect upon the virulence of the disease was noted. In cases in which the drug was administered by the mouth in doses ranging from 2 to 12 minims, three times a day, the diminution of the virulence was slight when the smaller doses were given, but when the larger amounts were reached there was an extremely marked diminution in virulence. In the case of guinea-pigs that received injections of tuberculous sputum into the legs, and were subsequently placed in a chamber in which creosote was heated until the air was saturated with the vapor, it appeared that the animal lived longer than untreated ones. Creosote injected under the skin of tuberculous guinea-pigs had a markedly restraining effect upon the morbid process, provided the disease were not too far advanced.

The Treatment of Cystitis in Children.—ESCHERICH (*Sem. méd.*, Aout, 1894; *Revue Internat. de Méd. et de Clin. Prat.*, No. 18, p. 322), in the treatment of cystitis in children with alkaline urine, practises lavage of the bladder twice daily with a warm 1 or 2 per cent. solution of boric acid, or a 5 per cent. solution of thymol. Besides he employs the following formula:

℞.—Potassium chlorate . . . gr. vi-ix.
Simple syrup . . . . . f ℥ss.
Water . . . . . f ℥j.—M.

S.—A dessertspoonful every two hours.

In addition he makes an infusion of the leaves of uva ursi (half an ounce), in boiling water (five ounces), and adds simple syrup (two drams and a half). Of this also a dessertspoonful is to be taken every two hours.

In cases in which the urine is acid good results will be obtained by lavage of the bladder with weak solutions of creolin (from ten to fifteen drops in boiled water, eight ounces), and the internal administration of salol in small doses.

For the Relief of Pruritus Vulvæ.—A strong solution of methylene-blue is recommended by MADDEN (*Provincial Medical Journal*, No. 153) as an analgesic lotion in the treatment of pruritus of the vulval area. An essential point in the local treatment of this condition is to secure asepsis of the parts by frequent ablutions with hot water (120° F.) and the use of some antiseptic detergent, followed on each occasion by the application of mercuric chlorid (1:1000) or other antiseptic wash. Thus prepared, the parts are ready for the application of the antipruritic lotion, which, in conjunction with the internal use of the same agent, in two-grain pills, two or three times a day, is said to bring about marked relief. The persistent local coloration produced by the application of methylene-blue is an objection to its employment.

For Pityriasis Capitis.—

℞.—Sulphuris præcipitati . . . . ℥jss.
Adipis lanæ hydrosi . . . ad ℥ij.

Misce et fiat unguentum.

S.—To be applied to the affected parts every second day. *The Practitioner.*

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A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

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SATURDAY, NOVEMBER 10, 1894.

A SUGGESTION TO STATE UNIVERSITIES.

IN our State universities there is a growing tendency to come into closer touch with the people. This is shown by the summer schools, by the relations that exist between teachers' associations and the faculty, by the extension-work both in voluntary centers and country agricultural societies, and by the organization under the wing of the university of museums and laboratories, formerly independent. No attempt has been made, so far as we know, to place under university management the charitable and reformatory functions of the State. It is not to be doubted, however, by any one with sufficient knowledge of existing conditions, that it would be productive of good to place under the care of the State university the institutions for the blind, for the deaf, for the feeble-minded, and the normal schools. It would be a matter of congratulation to see these institutions conducted on that broad and educational basis which we see manifested in our more progressive State universities, instead of on the narrow, provincial, and often mercenary basis which now prevails in many of them.

There are some who believe that our penitentiaries and hospitals for the insane, our jails and poorhouses, ought to be open to the students of our State universities and furnish them laboratories for the study of crime, poverty, and mental infirmity. These advocates affirm that when medical students have been freely admitted to hospital-wards for the purposes of clinical instruction, the beds have been cleaner, the food better, the death-rate lower, and the average stay of patients in the hospital shorter on that account. They affirm, moreover, that the corruption, favoritism, and neglect previously prevailing, have been regularly diminished by the unbribable supervision of students, and that a superior administration and a superior medical and surgical treatment have been at once obtained. As an example near at home, the history of the Charity Hospital in New Orleans is often cited. It is believed that the presence of students at law, of sociology, and of medicine, in the charitable and reformatory institutions of the State would have a corresponding beneficial influence, and in proof is cited the great work of the Massachusetts State Board of Health, which comes very largely through its close connection with the Boston Institute of Technology, and the supervision which it exerts over the water-supply and sewerage of cities and towns in that State. Attention is called to the function of the University of the State of New York, which now practically includes every pupil in all the public and private schools of the Empire State, and many more students in other States and in almost every part of the world. Some citizens would, however, be slow to place at once as integral parts of the university such diverse bodies as the institutions for defectives and criminals, the State boards of health, of charities, of education, of factory-inspection, and the commision of labor, of live-stock and of fish.

There are many medical men who are asking themselves why such universities as those of Illinois, Wisconsin, Nebraska, and Kansas do not do something for medicine. When we look into the courses of study in these institutions we see that they require for the bachelor's degree something like forty or fifty units of work. Of these at least ten or twelve are identical with or accessory to the course that every graduate in medicine should take. Some of them are identical in name though superior in educational quality to courses required in the better class of medical schools. In looking over an ideal curriculum of a four-year course in medicine amounting to forty-eight units, we find that at least

thirty of these units could be given by the present faculty of the University of Illinois, or of the University of Nebraska. These institutions are situated in cities too small to furnish adequate clinical facilities for a medical school. They have no appropriations for medicine, and with a divided medical profession appropriations are hard to get. These institutions could, nevertheless, offer without extra expense a larger part of the medical course with the facilities they have at hand, and allow election to their students in this direction during the last two years of the course leading to the bachelor's degree. They could give this degree on the completion of the required amount of work, that is, forty or fifty units, and there would still remain something over two years of work before the degree of doctor of medicine would be given. The university could lay out a course of study comprising about forty-eight units of work, upon the completion of which it would confer upon students the degree of doctor of medicine. Some or all of the first half of this course would be parallel to or identical with work which might be elected in the last two years of the course for the bachelor's degree. When the student had exhausted the facilities of the State university, and had received his bachelor's degree, he would be allowed to attend any reputable medical school for the remainder of the course, returning to the university once a year with evidence of work done, to pass examinations before the faculty of the university, and receive his credits. When all the required work had been accomplished by the student, and when he had received credit by examination, he would receive the degree of doctor of medicine from the university.

Thus the student would be encouraged to complete his literary work in the university and receive his literary degree, and then, in the course of two or three years at most, would be able to do non-resident work in the best medical schools of the country, and receive his degree of doctor of medicine from the State university. He would thus be classed with educated men. When we remember that the medical departments of the University of Michigan and of Harvard University, and the College of Physicians and Surgeons of New York, still require no more for admission than is required to enter the freshman class in the respective universities to which these schools belong, we can recognize the desirability of establishing schools in which the medical degree will have greater value. Such a supervision of medical schools as this plan would entail would have a salutary effect upon the medical colleges which these universities would recommend, and would especially increase the quality of the education in them.

REGISTRATION OF TUBERCULOUS PATIENTS.

THE Board of Health of the city of New York has recommended that "physicians and other persons to whom the knowledge of the existence of a case of tuberculosis may come be requested to report to this department all such cases within seven days of the time when such sick person comes within observation; that the medical sanitary inspectors, as a part of their duty, investigate cases of the disease reported, and take specimens of the sputa for diagnostic purposes, as is done in cases of diphtheria. These specimens should be transmitted to the division of bacteriology for examination, and upon verification of the diagnosis the inspector should visit the physician reporting each case and request him to fully instruct his patient and the persons with whom he is brought in contact concerning the nature of the disease and the danger of its transmission."

Registration, however, is not, as yet, compulsory in New York, and while many support the recommendations, as made by DR. CYRUS EDSON, the Commissioner of the Board of Health, many of the older and more prominent physicians of that city look upon such an innovation with distrust. DR. EDSON reports an encouraging advance, nevertheless, in gaining the goodwill and confidence of the medical profession toward the measures which he and many others believe to be for the public good. The maintenance of a bacteriologic laboratory by the city has been of great assistance to physicians on the one hand in verifying to a certainty, in doubtful cases, or on the other hand in eliminating the diagnosis of suspected tuberculous disease. Not only are the reports of cases carefully guarded by the Board of Health in a confidential manner, but the relations of the inspectors of the Board to individual physicians who report cases are governed by strict professional courtesy, and no bad results are said to come from the report of a case of tuberculosis.

The services of the New York bacteriologic laboratory can be had by any physician who, on reporting a case of pulmonary tuberculosis, forwards with his

report a small amount of sputum from the suspected case. Physicians are informed, through the agency of the medical press and circulars of information from the Board of Health, of the depots at which they can obtain, free of expense, "culture-tubes," in which the suspected matter is placed, and which have to be returned to the depots properly labelled. The collectors make the rounds of the depots daily, collecting the tubes charged during the preceding twenty-four hours, and which have been returned to the depots for collection. The charged tubes are taken to the bacteriologic laboratory, and are examined for the tubercle-bacillus, and a report is forwarded to the physician in charge of the case, informing him of the facts.

As soon as a case is diagnosticated as tuberculous an inspector visits the house and leaves circulars of information, which are concise and which direct the patient and those in contact with him how to avoid the danger of transmitting or acquiring the disease. On the death of a case the premises are disinfected, and are not permitted to be used by any new family, should the family remove, until the rooms have been thoroughly renovated by scrubbing, painting, or kalsomining. This is obligatory on the owner or lessee of the premises, and is enforced through the order of the Board of Health.

It is well known that tuberculous patients are not panicky; they are almost always hopeful and willing to co-operate by trying to carry out reasonable means for the protection of others; but to prevent antagonism too much should not be attempted at first, or the entire system will be likely to miscarry.

The motto of every Board of Health should be: *Innocenter*, *Patienter*, *Constanter*. People, the physician, no less than the laity, must be educated. More societies for the prevention of tuberculosis should be organized, and the great truths as to the nature and prevention of the disease should be judiciously and widely disseminated. We want a medical propaganda with earnest, active members, but yet as wise as serpents and as harmless as doves. No foolish antagonism and sweeping laws should be permitted. Let the system be advisory at first, and later on, if medical sentiment and public sentiment approve, put it upon the statute-book. Organize and maintain special hospitals and cottage-sanitaria for tuberculosis. Find out the localities where medical measures will receive the greatest aid from natural resources of air and sunlight. Make it easy, if we can, to take these afflicted beings out of cities to brighter skies and evergreen forests, where Nature and art, hand-in-hand, may work together for their good, and, it may be, for their final cure.

EDITORIAL COMMENTS.

The External Use of Guaiacol as an Antipyretic.—Excessive zeal and indiscriminate employment too often result in obscuring or aborting the usefulness of newly advocated therapeutic measures. This has been the history of antipyrin and other coal-tar products of recent origin; and it will be conceded that tuberculin has at least great diagnostic if not some therapeutic utility. Although mercury intelligently employed acts with almost specific effect in the treatment of syphilis, its misdirected use may result in fatal intoxication. Again, it will not be denied that when indicated, bleeding subserves a purpose not to be fulfilled by any other therapeutic measure, but its indiscriminate application cannot be too severely condemned as baneful. While quinin has cured innumerable cases of malaria, there can be little doubt that some cases of hematuria, and perhaps some deaths, are attributable to cinchonism. Drugs must thus be looked upon as two-edged swords, equally capable of evil as well as good. Thus the recent reports of the results obtained from the topical employment of guaiacol in the reduction of the temperature of pulmonary tuberculosis have oscillated between extremes, the one showing desirable the other undesirable effects. An intelligent conclusion in such a doubtful matter is only to be arrived at by the long-continued and patient observations of careful investigators, of keen discernment and conservative judgment. Probably the first record in the United States of the endermatic employment of guaiacol in the reduction of the high temperature of pulmonary tuberculous was made by J. SOLIS-COHEN (see THE NEWS, Sept. 30, 1893, p. 380). Other reports of an allied nature were made in THE NEWS by DA COSTA (Jan. 29, 1894, p. 85), and by THAYER (March 31, 1894, p. 343). COHEN (*Fort Wayne Medical Journal*, vol. ii, No. 11, p. 348) has continued his observations, and is now able to report a series of thirty cases of tuberculosis in which the theraputic measure here considered was employed with satisfactory results. The applications were only made when the temperature rose above 102°.

The skin is first washed with soap and water at the seat of application and then dried thoroughly. From 10 to 25 minims or more of guaiacol are poured into a vessel and brushed upon the skin with a camel's-hair pencil, which is to be rubbed upon the parts again and again until the whole dose has been absorbed. This procedure will occupy ten or fifteen minutes, and sometimes more. The part treated can be rubbed dry with the hand. It is covered with a layer of cotton and paraffin paper or oiled silk. In many cases the temperature will drop a degree or two before the rubbing has been completed, and a drop of 2° is quite frequent within thirty minutes of commencing the application. Free perspiration is a good indication of the satisfactory effect of the remedy, and should be encouraged by the use of a hot drink, preferably milk, and the application of a hot-water bag. Should the decline of temperature be too great a little artificial heat will prove grateful.

Indirect Injury to Health from Foot-ball.—A physician whose deserved fame is known of all medical men, and whose credibility is beyond suspicion, informs us that a number of foot-ball players on one of our college-teams were brought to him suffering from very decided gastric disturbances. The young men were always healthy until these symptoms developed, and they only developed after the players went under training. It seems that they were kept upon a most rigid diet, which was evidently regulated in violation of all principles of ordinary hygiene, by a trainer who did not even consult a physician or a physiologist, in spite of the fact that in the faculty of the college to which this crowd belongs he could have had the best of advice. The chief constituents of the diet appear to have been very thoroughly cooked beefsteak, eggs, and as a fluid, cold tea; water was rigidly excluded, in spite of the fact that these boys necessarily perspired very freely. As a natural result, after about six weeks the entire crowd was completely upset in its digestion, and although this appeared to be a matter of complete indifference to the trainer, the fact that these boys could no longer play with any degree of spirit or with any strength and persistence awakened him at last to the idea that something was wrong. The most interesting fact in this history was that each of these men maintained that the change in weight during a game of foot-ball was very marked. One man, who weighed 200 pounds, lost eight pounds of weight in about two hours, during the last game; a second man, who weighed 165 pounds, lost five pounds during the last game; a third, who weighed 160 pounds, and was the best of the three in point of digestion, lost three pounds during the last game. These men are accurately weighed before and after playing; they have no object or desire in misrepresenting, and their statement has been amply confirmed by outside sources.

"Now, it seems to me that any sport which involves expenditure of vital energy sufficient to compensate in two or three days for a loss of from three to eight pounds weight in two hours is injurious. It must call for an activity in the chemistry of the body which puts that body upon an awful strain. I do not wonder that these three young men are suffering, not only in their digestive system, but also in their nervous system; and it seems to me that such a method of training and of exercise is destined to permanently impair their health."

Such a statement by an intelligent and impartial observer and an advocate of the college spirit is certainly beyond comment, and is deserving of respectful consideration of even the ardent supporters of foot-ball.

The Influence of Massage upon the Body-Metabolism.—Intelligent massage has a potency not yet fully and generally appreciated or understood. The observations of Dr. J. K. Mitchell, recently recorded (see THE MEDICAL NEWS, December 23, 1893, p. 715; and the *American Journal of the Medical Sciences*, May, 1894, p. 502), show beautifully the marked changes that may be brought about in the globular richness of the blood by well-directed manipulation. One would *à priori* be led to believe that such a form of exercise would be attended with metabolic changes, the evidences of which are to be looked for in the excreta. This deduction is confirmed by the results of an investigation by BENDIX (*Zeitschr. für klin. Med.*, Bd. xxv, Heft 3 u. 4; *Centralbl. f. innere Medicin*, 1894, No. 40, p. 944), who has found that general massage of healthy individuals constantly induces an increase in the daily amount of urine and of the excretion of nitrogenous matter in the urine. The increase occurs on the first or second day of the manipulations, rising slightly on the following days, finally reaching a level that is preserved throughout the period of observation. Upon cessation of the manipulations the curve does not fall suddenly, but in the course of from two to five days. When the manipulations are intermitted for a considerable time, one or two days usually elapse after its renewal before its effects are again observable. It is believed that as a result of the massage more water is sent to the kidneys through the blood, and that urinary secretion is still further stimulated by substances expressed from the muscles. The increased elimination of nitrogenous matters is ascribed to the acceleration of the circulation. It was also found that the manipulations were attended with a diminished presence of fat in the intestinal evacuations, together with an increased elimination of nitrogenous matters.

A Non-repeating Prescription-blank.—With a view to prevent the unauthorized and indiscriminate renewal of prescriptions, G. R. Shimmel in the *Bulletin of Pharmacy*, vol. viii, No. 10, p. 457, suggests the following form of prescription-blank:

DISPENSER'S STUB { Returnable to the Prescriber in five days from date.

PRIVATE FORMULA. No copy. No repetition. Date, 189

℞

Sent to

Dispensed by M.D.

Book No.

Book PATIENT'S STUB. No.

Date 189

For

Directions

M.D.

Dispensed by

Prescription and stub are sent to the pharmacist, who affixes the stub to the bottle or box and after five days returns the prescription to the writer. The druggist is

of course at liberty to make copies of such prescriptions as he may select for self-protection or other legitimate purposes, but all applications for renewal or copy on the part of patients are to be referred to the physician. The proposition seems reasonable and practicable, and its general adoption would do much to encourage and strengthen the cordial and confidential relations that should exist between doctor and druggist.

Atrocious Villainy.—The appalling corruption and degradation of the New York City government has seemed to reach its lowest depth during each day of the entire investigation of the Lexow Committee. But it is now impossible to imagine anything worse than was revealed last week, when it was shown that there has been a systematized official plundering and protection of criminal abortionists. Such a thing has never entered into the thought of the most pessimistic vilifier of human nature. That men whose duty it has been to protect society from the most depraved of human beings and callings should deliberately organize themselves to protect the villains, and by protecting extort from them unknown amounts of money (one man paying $2825 within six weeks)—all this surpasses belief, and makes us shudder to think of the modern degradation of human beings. The wise physician finds something better to do than to "meddle with politics;" but when "politics" means the debauching of his profession and the brutal traffic in human health and human beings, then it is time for him to make his influence felt. It was stated that in New York there are two-hundred of these professional abortionists. We trust not so many, but it is only too true that in every large city criminal abortion is carried on to much larger extent than any one individual can know; and when we hear nothing about it, when all goes on smoothly and silently, when no cases are brought to view and to trial, then and there, probably, is the fiendish trade most rampant.

A Biologic Laboratory for the Philadelphia Board of Health.—At a recent meeting of the Philadelphia Board of Health the Sanitary Committee presented a report recommending the establishment of a Biologic Laboratory and the engagement of a competent bacteriologist and such assistants as may be required for the purpose of conducting investigations of contagious diseases, and facilitating diagnosis, of investigating water-supplies and food-supplies, and of indicating and, as far as possible, providing the appropriate remedial measures. The board already possesses a complete outfit for general bacteriologic investigation, and the Building Commission has placed a sufficient amount of room at the disposal of the board. City Councils are now asked to make an appropriation of $15,000 for the purposes of organizing a Division of Bacteriology and Disinfection, engaging the necessary experts, purchasing additional apparatus, and for incidental expenses. The project should receive universal endorsement, and as little time as possible should be lost in putting it into execution. The work of the Division of Pathology and Bacteriology of the New York Board of Health affords convincing evidence of the sanitary good that can be effected by rigorous and intelligent application of the principles deducible from existing knowledge of the causes and prevention of disease. Philadelphia should not be a tardy second in emulating the good example set by the great metropolis.

The Temperance Reform League of Massachusetts and the Keeley Cure.—Dr. B. D. Evans, the Medical Director of the New Jersey State Hospital for the Insane, has been admitted to membership in the Temperence Reform League of Massachusetts. This ends a battle between Dr. Evans and the Keeley cure, as far as Massachutetts can decide it, with victory in favor of the former. Dr. Evans, it will be remembered, gathered statistics from insane asylums over the United States and among the one-thousand insane patients in the hospital of which he has charge, compiling valuable and detailed "tables of cases of relapse, suicide, mania, and dementia subsequent to the graduation at the Keeley Institute." His article, which was published in THE MEDICAL NEWS of May 6, 1893, was reprinted in Boston papers, and his report was laid before the Temperance Reform League. It was bitterly denounced by the "Keeley Cure," which applied to the Temperance Reform League for an examination, for this organization by its charter from the State is a quasi-court, whose functions are those of a judge who examines conflicting medical evidence in a suit for malpractice and announces the result. The end of the trial has been reached, and Dr. Evans is honorably welcomed into the society, and thanked for his services in exposing pseudo-reform, while the Keeley offices in Boston have been abandoned.

The Optician's Impudence.—We wish to call the attention of those ophthalmalogists who have contended that the treatment of refractive errors is a matter of non-mydriatic mechanics and optics to the use that the optician is making of their absurd contention. Supported by the authority of such physicians the commercial optician is demanding and convincing the public of this dangerous error. He is reproducing their words in flaming advertisements, gathering and reporting his cases just as a physician does, and talks glibly of reflex diseases of the eyes cured by his great skill, and of ophthalmometers, phorometers, etc., and of the absurdity of the use of belladonna. He cures all cases of squint, of muscular as well as refractive errors, by his wonderful glasses. In the same circular he promises "strict co-operation" with the general physician, and appeals to him to send patients to the great optician, and thus utterly abolish the ophthalmalogic physician. It is a fine scheme, but it has already failed more than once, and especially must it fail when the optician-long-ears quotes the neurologist *ad nauseam* that "*the oculist fails if he is only an oculist,*" leaving the stupidest suggested query unanswered, "But if he be only an optician must he not more certainly fail?"

Bacteriology of Baked Bread.—In a recent issue of *The Lancet*, MESSRS. WALDO and WALSH give the results of an investigation to determine to what extent baking destroys the vitality of the microbes of dough. They succeeded in cultivating thirteen different species from a portion taken out of the center of recently baked loaves. These facts may seem at first to be of little value, but it is shown that bread may be an active distributer of con-

tagion. Dr. Waldo, who is medical officer of one of the London districts, gives a startling account of the filthy and insanitary condition of some of the bakeries. Many are located in cellars. These insanitary conditions affect both the producers and consumers. It is stated that journeymen bakers as a class are shortlived. It has been generally supposed that even if dough should become infected, it will be rendered sterile by the baking, but this is now shown to be erroneous. The fact is that bread-manufacture should be conducted entirely on a large scale by the aid of machinery, so that the materials shall not be touched by human hands throughout the process. This is now perfectly feasible. The subject of the conveyance of infection by food other than by milk merits further study.

Honor to Whom Due.—It was a generous impulse that prompted Prof. Roux, of Paris, when complimented and praised for his labors in connection with the preparation of the antitoxin of diphtheria, and its successful clinical employment, to modestly disclaim the credit for the discovery of this promising and powerful therapeutic agent, and to yield priority to his German confrères, and more particularly to Prof. Behring, of Berlin, whose method Roux frankly admitted he had followed. How much more admirable this than the unseemly contests for "priority" with which the world has from time to time been edified in connection with so-called discoveries in medicine. Great as is the credit and the honor that must be conceded to Koch's pupils for their great work in the domain of biologic therapeutics, a full share belongs also to their French colleagues, the pupils of Pasteur, and a special obligation is owing to Prof. Roux for his frankness and truthfulness, especially on an occasion on which the reverse was more than tempting.

Edible Mushrooms.—The last annual report of the Division of Microscopy, U. S. Department of Agriculture, gives some finely executed plates of edible mushrooms. Five species are figured. The food-value of mushrooms has been rather overrated; although containing much nitrogen, they are not easily digestible. In view of the poisonous action of many species, it is an advantage to have correct and vivid representations of the safe forms.

REVIEWS.

LABORATORY MANUAL OF ELEMENTARY CHEMICAL PHYSIOLOGY AND URINE ANALYSIS. By J. H. LONG, M.D., Sc.D., Professor of Chemistry in the School of Medicine and Pharmacy of Northwestern University. Small 8vo, pp. 360, and Index. Chicago: E. H. Colegrove & Co.

THIS is a departure in some respects from the type of laboratory manuals. It associates physiology and chemistry more intimately than is usual in such works. It covers the work done in the second year's course in the medical school with which the author is connected. We note in the preface, with much satisfaction, that Dr. Long favors the plan of making chemistry a requirement of entrance to medical study, and thus relieving the college proper of the duty of teaching. We fear he is right in saying that this consummation is far in the future, but it is surely one devoutly to be wished. It will be a happy day for medical colleges when they can devote themselves to giving instruction in actual medical and surgical work, and not be burdened with lectures, laboratory instruction, and quizzes on accessory sciences.

The work begins with a consideration of the methods employed in physiologic chemistry, interspersed with experiments illustrating these methods. The definition of normal solution given on p. 9 is likely to be confusing to students. The formal definition given in the first part of the paragraph should not have been inserted, since it is mentioned only to be practically set aside a few lines below. We feel also obliged to say that unless Dr. Long's pupils are more apt at mathematics than is usual in colleges of pharmacy and medicine, they will find some difficulty with the explanations in specific gravity.

A valuable feature of the book is the explanations of polarization methods. Rotary actions are so frequently mentioned in the teaching of physiology and organic chemistry that it is necessary to discuss the subject somewhat, and unless it is carefully explained students are likely to confound rotation with refraction. Fifteen pages are devoted to the theory of polarization and descriptions of polarimeters, the details being illustrated with cuts, all of which are superior to those in other parts of the book. It is interesting to reflect as to what is to become of our standard methods of explaining polarization if the opposition to the undulatory theory of light, now so vigorously led by Ostwald, should be successful.

We regard the manual as excellently adapted for medical colleges.

THE SCIENCE OF VITAL FORCE. ITS PLAN, DIVISION OF FUNCTION, AND OPERATIVE METHODS IN HEALTH AND DISEASE. AN INVOLUNTARY AGENCY OF NATURE THAT CAN BE HARNESSED AND UTILIZED. By W. R. DUNHAM, M.D., author of the *Higher Medical Culture*. 12mo, pp. 198 Boston: Damrell & Upham, 1894.

IN reading this tilt against the theories and established facts of modern biologic science, one is reminded of the assurance and result with which Sir Uwaine is described as having undertaken to unhorse Sir Launcelot. "And there with al syre Uwaine gate his spere in his hand and rode toward syre Launcelot, and syre Launcelot knew him wel, and so he mette him on the playne and gafe him such a buffette that he was astonyed, that long he wyst not where he was."

In the present encounter the would-be scientific knight evidently "wyst not where he was" before he began, and when the gentle critic turns down the last page he is again reminded of an amusing incident charmingly recorded in Christopher North's *Noctes Ambrosianæ* (xxv). On the occasion referred to, the Ettrick Shepherd got "rattled" during a discussion upon commerce and credit with Christopher North, Mr. Tickler and the English opium-eater, and in the following wise:

Mr. De Quincey had secretly fed a box of opium-pills, by way of experiment, to a young Newfoundland dog that North had just introduced to their notice. The dog got crazed with the opium and cut up a number of

pranks in the which a swarm of bees got loose and stung the opium-eater, Mr. Tickler and the Shepherd; the latter two quite badly, for their swollen faces required leeches and lotions. After the basins and towels and such like had been removed the following colloquy ensued:

Shepherd: "Hoo's my face noo?"

North: "Quite captivating, James. That dim discoloration sets off the brilliancy of your eyes to great advantage, and I am not sure if the bridge of your nose as it now stands is not an improvement."

Shepherd: "Weel, weel, le's say nae mair aboot it."

"That's richt, Mr. Tickler, to hang your silk handkerchief ower your face, like a nun taking the veil; where were we at?"

A TREATISE ON THE PRINCIPLES AND PRACTICE OF MEDICINE. Designed for the use of Students and Practitioners of Medicine. By AUSTIN FLINT, M.D., LL.D., Late Professor of the Principles and Practice of Medicine, and of Clinical Medicine in Bellevue Hospital Medical College, N. Y. Seventh edition, thoroughly revised by FREDERICK P. HENRY, M.D., Professor of the Principles and Practice of Medicine in the Woman's Medical College of Pennsylvania, Philadelphia. Pp. 1143. Philadelphia: Lea Brothers & Co., 1894.

DR. HENRY is to be congratulated on the success with which he has accomplished the revision of Flint's classic *Practice*. The task of revising the work of another after the lapse of a period of eight years is not a light one, but in this instance it has been performed with a skill and a delicacy that command admiration and disarm criticism. Of the original work there is naught to say; this has attained a high place in American medical literature; while the additions and alterations are characterized by a care and thoroughness for which the reviser has earned a deserved reputation. The most important change in the present edition is the omission of the section on general pathology, as finding a more appropriate place in special works devoted to the subject. Many new articles (upward of twenty) have been incorporated in the text, and throughout the work may be found such annotations of the reviser as the progress of time has necessitated. The section devoted to the consideration of the functional disorders of the stomach, together with modern methods of study of the gastric functions for diagnostic purposes, has been brought up to date and constitutes a terse and clear delineation of the present aspect of this intricate and not yet finally elaborated subject. The editor states that he entered upon the task of revision with a feeling of reverence for the memory of the distinguished author of the original, and that "if he has erred, it has been in the direction of conservatism." We can only add that he has performed his task well and thereby served to insure for Flint's *Practice* a continuance of the popularity it has so long deservedly enjoyed.

ON DOUBLE CONSCIOUSNESS. By ALFRED BINET. The Religion of Science Library. The Open Court Publishing Company. Chicago: 1894.

THE author of this little book belongs to the so-called most advanced school of French psychologists. The book is very interesting, but one cannot help feeling that if the writer had more skepticism the reader would need less. It would appear, for instance, to the ordinary thinker, that an apparently anesthetic hand which wrote when a pencil was put in it was not really anesthetic; rather than that, the person holding the pencil had a second consciousness of which he was not conscious. The explanation of many curious phenomena by reflex action and automatism receives scant attention. Truly there is much paradox in advanced psychology, and much faith in the childlike innocence and truthfulness of hysterics.

A MANUAL OF HUMAN PHYSIOLOGY; PREPARED WITH SPECIAL REFERENCE TO STUDENTS OF MEDICINE. By JOSEPH H. RAYMOND, Professor of Physiology and Hygiene at the Long Island College Hospital, and Director of Physiology in the Hoagland Laboratory; with 102 illustrations in the text and 4 full-page colored plates. 8vo, pp. 382. Philadelphia: W. B. Saunders.

THE conciseness and lucidity with which the subject is handled by Prof. Raymond in his excellent little manual challenge admiration, and, if calling forth criticism at all, it is not so much with the book as with the fact that our medical schools allot so brief a time to the study of physiology, "that the students can assimilate only the main facts and principles of this branch of medicine, which lies at the very foundation of a sound knowledge of the healing art," and which therefore necessitates the use of books which give no insight into the historic development of physiologic science, or any knowledge of the methods which have served to establish the aforesaid "main facts and principles." Physiology is preëminently an experimental science, and the student cannot afford to content himself with the mere memorization of facts and principles, but must make himself familiar by laboratory-experiment and the study of thorough-going treatises dealing with the development of this fundamental department of medical science. This little volume is, however, one of the best of its kind, quite up to date, and will be found valuable to all who are so unfortunate as to be limited in time.

THE JEWISH METHOD OF SLAUGHTER COMPARED WITH OTHER METHODS, FROM THE HUMANITARIAN, HYGIENIC, AND ECONOMIC POINTS OF VIEW. By J. A. DEMBO, M.D. Translated from the German, with the author's amendments. Published by the Trustees of the late J. A. Franklin. 8vo, pp. 14. London: Kegan Paul, Trench, Trübner & Co., Lt.

THIS work grew out of an agitation against the Jewish method of slaughter, the opposition being in the main from some of the European societies for the prevention of cruelty to animals. It is probable that the anti-Semitic element in many places took up the cry, not from any sympathy with the slaughtered animals, but for the purpose of annoying Jewish fellow-citizens. Dr. Dembo goes into the question thoroughly, discussing all the methods of slaughter from anatomic and physiologic standpoints. He has also investigated the influence of the various methods on the palatability and keeping qualities of the meat. The text has a strong flavor of

controversy. It is evident that much feeling has been engendered by the dispute.

The work defends unreservedly the Jewish method as the most humane and certain, and the one producing the most wholesome meat. In a few lines given to slaughter by electricity the inference is suggested that this method for execution of criminals has failed in the United States. The translation is well done.

THE PRINCIPLES OF BACTERIOLOGY: A PRACTICAL MANUAL FOR STUDENTS AND PHYSICIANS. By A. C. ABBOTT, M.D., First Assistant, Laboratory of Hygiene, University of Pennsylvania, Philadelphia. New second edition. 12mo, 472 pages. Illustrated. Philadelphia: Lea Brothers & Co., 1894.

THIS excellent manual needs no introduction to students of bacteriology, who will welcome a new edition in which the text has been doubled and elucidated by means of many additional illustrations. The colored illustrations, of which there are seventeen, are a new feature, and like the differentiated or counterstained preparations they represent, several of them afford very pretty and instructive pictures of bacteria in tissues.

While the arrangement and purpose of the earlier edition have been maintained, the descriptive portion of the work has been extended, and a new and valuable chapter has been introduced, entitled "Infection and Immunity," in which the author defines clearly and concisely the types of infection, and gives a chronologic *résumé* of experimental research bearing upon the nature of immunity, concluding with a summary of our knowledge of these conditions at the present time.

A list of apparatus and materials necessary to equip a bacteriologic laboratory appear in an appendix, and will be helpful to the beginner.

NEWS ITEMS.

The Mississippi Valley Medical Association will hold its twentieth annual meeting in Hot Springs, Ark., November 20, 21, 22, and 23, 1894. The following program is announced:

Cases of Traumatic Cataract in Children Treated by Extraction, by James M. Ball, St. Louis; Toxics, by W. F. Barclay, Pittsburg; The Philosophy of Stimulants, by A. D. Barr, Calamine, Ark.; Squint, with Special Reference to an Operation, by Charles H. Beard, Chicago; Conservative Surgery, and What it Means at the Present Time, by A. C. Bernays, St. Louis; The Deeper Inflammations of the Skin, by A. W. Brayton, Indianapolis; Intestinal Indigestion, by A. P. Buchman, Fort Wayne, Ind.; The Medical Expert Witness, by Robert M. Campbell, Esq., Ashland, O.; Some Observations on "Sore-throat" Due to Concretions in the Tonsils, by L. C. Cline, Indianapolis; The Differential Diagnosis of Coma, by W. J. Conklin, Dayton, O.; Constipation, by George J. Cook, Indianapolis; Syphilis, and Its Relation to Other Affections, Especially those of the Skin, by William T. Corlett, Cleveland; Surgical Treatment of Uterine Fibroids; Disposal of the Pedicle, by A. H. Cordier, Kansas City, Mo.; Stab-Wound of Pericardium; Resection of Rib; Suture of Pericardium; Recovery, by H. C. Dalton, St. Louis; Surgical Treatment of Trachoma, by Davis A. Dean, Pittsburg; Possibilities of Medicine, by J. O. DeCourcy, St. Libory, Ill.; Some New Instruments and Means of Physical Diagnosis, by Charles A. Denison, Denver, Col.; subject unannounced, Arch Dixon, Henderson, Ky.; Quinin in Chorea, by Frank R. Fry, St. Louis; A Few Remarks on the Early History of Rectal Diseases, by S. G. Grant, Kansas City, Mo.; Report of a Case of Trephining for Cerebral Clot, with Loss of Vision, Recovery, by John B. Hamilton, Chicago; Diseases of the Accessory Nasal Cavities; Their Influence Upon the Organs of Sight; Modern Surgical Treatment, with Report of Cases, by C. R. Holmes, Cincinnati; Spot Specialism, by C. H. Hughes, St. Louis; The Management and Treatment of Endometritis, and the Prevention of Tubal and Ovarian Diseases, by W. H. Humiston, Cleveland; Functional Stenosis; Its Relation to Malformations, Dislocations, and Flexions; and Conditions Characterized by Amenorrhea, Dysmenorrhea, and Hyperemias; with a Scientific Rationale in Therapeutics, by George F. Hulbert, St. Louis; subject unannounced, W. S. Kerr, Mansfield, O.; subject unannounced, W. E. Kiely, Cincinnati; The Neatest Method of Circumcising, by Bransford Lewis, St. Louis; Colles' Fracture, by J. E. Link, Terre Haute, Ind.; Double Nasal Atresia, due to Smallpox, by H. W. Loeb, St. Louis; Tubercular Meningitis, by I. N. Love, St. Louis; Physicians' Prescriptions, by Starling Love, Columbus, O.; Traumatic Lesions of Cranium and Brain; Report of Clinical Cases, by Geo. N. Lowe, Randall, Kan.; Observations on Residual Urine and Remarks on Perineal Section, by G. Frank Lydston, Chicago; Modern Surgical Technique, by Henry O. Marcy, Boston; subject unannounced, Heine Marks, St. Louis; Tumors of the Neck, by Donald Mclean, Detroit; Advantages and Disadvantages of Kraske's Operations, by Joseph M. Mathews, Louisville; Resection of the Knee for Separation of the Lower Epiphysis of the Femur; Case of Two Years' Standing in a Patient Thirteen Years of Age, by A. H. Meisenbach, St. Louis; Accidents and Injuries from Electric Currents of High Potential, by Harold N. Moyer, Chicago; The Mental Symptoms of Cerebral Syphilis: A Clinical Study, by Frank P. Norbury, Jacksonville, Ill.; Enlarged Tonsils and Their Treatment, by John North, Toledo, O.; My Experience With Cold as a Therapeutic Agent, by A. M. Owen, Evansville, Ind.; The Surgical Treatment of Injuries of the Head, by Charles B. Parker, Cleveland; Headache, by Curran Pope, Louisville; Address on Surgery, by Joseph Ransohof, Cincinnati; Syphilis, by A. Ravogli, Cincinnati; Reform in the Management of the Insane and the Neurotic Viewed from a Gynecological Standpoint, by Charles A. L. Reed, Cincinnati; Retinitis Syphilitica, by Dudley S. Reynolds, Louisville; The Spine and the Elevator, by B. Merrill Ricketts, Cincinnati; Infantile Paralysis, by John Ridlon, Chicago; President's Address, X. C. Scott, Cleveland; Epilepsy, by C. E. Smith, Waco, Tex.; Climate and Tuberculosis, by S. E. Solly, Colorado Springs, Col.; Toxicity in the Production of Nervous Diseases, by Albert E. Sterne, Indianapolis; Constipation from a Surgical Standpoint, by Leon Straus, St. Louis; Laparotomy for Pelvic Diseases no Longer Necessary, by R. Stansbury Sutton, Pittsburg; Medication of the Air-Passages by a New Atomizing Vapor-

izer; With Experiments on Animals, by Homer M. Thomas, Chicago; The Importance of Urinalysis in Diagnosis, by A. B. Walker, Canton, O.; Reflex Irritation as a Cause of Nervous Diseases, by Edwin Walker, Evansville, Ind.; subject unannounced, H. O. Walker, Detroit; Hydrocele, by W. C. Weber, Cleveland; Address on Medicine, by J. T. Whittaker, Cincinnati; Tumor Albus of the Knee-Joint, by William E. Wirt, Cleveland; Influence of Inflammation of the Seminal Vesicles in Maintaining Gleet, by W. N. Wishard, Indianapolis; Modern Antiseptic and Aseptic Midwifery in Private Practice, by E. Gustave Zinke, Cincinnati.

The Southern Surgical and Gynecological Association will hold its Seventh Annual Meeting at Charleston, S. C., on November 13, 14, and 15, 1894. The following program has been arranged: Address of Welcome and Response; Memorial Address on Dr. Warren Stone, by A. B. Miles, M. D., New Orleans, La.; Operation for Complete Perineal Laceration, by Jos. Price, M.D., Philadelphia, Pa.; Gonorrhea in Women, by J. B. S. Holmes, M.D., Atlanta, Ga.; Some Cases of Intestinal Obstruction, with Deductions Therefrom, by A. M. Cartledge, M.D., Louisville, Ky.; Hernia of the Diaphragm, with Report of a Case, by Floyd W. McRae, M.D., Atlanta, Ga.; The Treatment of Sinuses Following Celiotomy, by W. H. Wathen, M.D., Louisville, Ky.; The Diagnosis and Treatment of Congenital Cystic Hygroma, by J. A. Goggans, M.D., Alexander City, Ala.; Some Complicated Cases of Abdominal Surgery, by J. G. Earnest, M.D., Atlanta, Ga.; Early Operation in Appendicitis, with a Case, by J. McF. Gaston, M.D., Atlanta, Ga.; Appendicitis, by W. B. Rogers, M.D., Memphis, Tenn.; Attention to Women Before and After Labor, by W. G. Bogart, M.D., Chattanooga, Tenn.; Plastic Operations for Carcinoma of the Breast, by J. T. Wilson, M. D., Sherman, Texas; Gunshot Wound of Spleen, Hemostasis by Deep Suture, Recovery, by L. McLane Tiffany, M.D., Baltimore, Md.; Technique of Vesical Drainage, by G. Frank Lydston, M.D., Chicago, Ill.; Successful Treatment of Case of Nevus by Electricity, with Remarks, by William Perrin Nicolson, M.D., Atlanta, Ga.; The Use of Electricity in Late Syphilis, by Lewis Wheat, M.D., Richmond, Va.; Observations on the Action of Chloroform on the Functions of the Human Brain and Spinal Cord, as Witnessed in Extensive Injuries of the Cranium and Brain, by Bedford Brown, M.D., Alexandria, Va.; Treatment of Abscess of the Liver, by J. D. S. Davis, M.D., Birmingham, Ala.; Puerperal Peritonitis, by V. O. Hardon, M.D., Atlanta, Ga.; Treatment of Peritonitis, by Richard Douglas, M.D., Nashville, Tenn.; Movable Kidney, by Geo. Ben Johnston, M.D., Richmond, Va.; History of Vaginal Extirpation of the Uterus, by Geo. J. Engelmann, M.D., St. Louis, Mo.; The Present Status of Gall-Bladder Surgery, by A. Vander Veer, M.D., Albany, N. Y.; Gynecological Surgery Away From the Large Cities and Educational Centers, by W. L. Robinson, M.D., Danville, Va.; Reminiscences of Dr. J. Marion Sims in Paris, by Edmond Souchon, M.D., New Orleans, La.; President's Address, by C. Kollock, M. D., Cheraw, S. C.; Transfusion in the Treatment of Acute Hemorrhage, by T. J. Crofford, M.D., Memphis, Tenn.; A Case of Vaginal Hysterectomy for Carcinoma of the Uterus, Three Days After Parturition, by Geo. H. Noble, M.D., Atlanta, Ga.; The Simultaneous Appearance of Cancer in the Breast and Uterus, by James Evans, M.D., Florence, S. C.; Something About the Final Condition of the Mouths in Gastro-enterostomies, with Specimens, by H. Tuholske, M.D., St. Louis, Mo.; Puzzling Point in Labor, by Geo. R. Dean, M.D., Spartanburg, S. C.; Suprapubic Cystotomy Compared with Perineal Operations, by C. H. Mastin, M.D., Mobile, Ala.; Tracheotomy for Foreign Bodies in the Air-Passages, by W. F. Westmoreland, M.D., Atlanta, Ga.; Ligation in Continuity, with Report of Case 1. Ligation of the External and Internal Carotid Arteries and Internal Jugular Vein. Case 2. Ligation of the External Carotid Artery, by Jno. A. Wyeth, M.D., New York; The Placenta: When and How Delivered, by J. B. Murfree, M.D., Murfreesboro, Tenn.; Report of Cases of Varicocele Treated by the Open Method and Shortening of the Scrotum, by W. E. Parker, M.D., New Orleans, La.; Treatment of Cystitis in the Female, by Hunter McGuire, M.D., Richmond, Va.; Hydro-pyonephrosis—Successful Removal of a 40-pound Tumor of the Kidney, by Jos. Taber Johnson, M.D., Washington, D. C.; The Value of Plastic Work in Intra-peritoneal Operations, by J. W. Long, M.D., Richmond, Va.; Fibroid Tumor of the Uterus, with Suppurating Ovary Discharging per Rectum, by Rufus B. Hall, M.D., Cincinnati, Ohio; Technique of Operations on the Pregnant Uterus, by W. D. Haggard, M.D., Nashville, Tenn.; The Relation of Uterine and Ovarian Disease to Insanity, by L. S. McMurtry, M.D., Louisville, Ky.; Surgery of the Ureters, by Howard A. Kelly, M.D., Baltimore, Md.; Ideal Operation for Varicocele, by G. Frank Lydston, M.D., Chicago, Ill.; The Value of Coccygeal and Sacral Resection in the Treatment of Congenital Occlusion of the Rectum, by Rudolph Matas, M.D., New Orleans, La.; The Surgical Treatment of Spina Bifida, with an Illustrative Case, by H. O. Marcy, M.D., Boston, Mass.; Ligation of the Uterine Arteries in the Treatment of Chronic Metritis, by W. E. B. Davis, M.D., Birmingham, Ala.

Relative Standing of the Graduates of the Various Medical Colleges examined by the South Carolina State Board of Medical Examiners, October 9 and 10, 1894.

Names of Colleges represented.	No. of applicants from each.	No. that passed the Board.	No. rejected.
Medical College of Georgia, Augusta, Ga.	1	0	1
Medical College of Virginia, Richmond, Va.	1	1	0
Medical Department Howard University, Washington, D. C.	4	2	2
University of Pennsylvania, Philadelphia	1	1	0
University of City of New York	1	1	0
Woman's College of New York Infirmary, New York	1	1	0
College of Physicians and Surgeons, Baltimore	1	0	1
Medical College of Baltimore	1	1	0
South Carolina Medical College, Charleston, S. C.	3	3	0
Total	14	10	4

Relative Standing of the Graduates of the Various Medical Colleges examined by the State Board of Medical Examiners, representing the Medical Society of the State of Pennsylvania, June 11–14, 1894.

Medical College from which applicants graduated.	No. examined.	No. failed.	Per ct. of failures	Aver. grade.
University of Pennsylvania . . .	76	1	1.32	87.76
Woman's Medical College . . .	18	2	11.11	83.44
Jefferson Medical College . . .	67	5	7.46	83.29
Medico-Chirurgical College . .	26	3	11.54	82.48
Western Pennsylvania College .	44	3	6.82	81.13
College of Phys. and Surgs. (Balt.)	3	1	33.33	80.68
Baltimore Medical College . . .	8	5	62.50	75.81
Miscellaneous Colleges	26	9	34.61	74.77
Total	268	29	10.82	82.18

Alvarenga Prize of the College of Physicians of Philadelphia.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Senor Alvarenga, and amounting to about one hundred and eighty dollars, will be made on July 14, 1895, provided that an essay deemed by the Committee of Award to be worthy of the prize shall have been offered.

Essays intended for competition may be upon any subject in medicine, but cannot have been published, and must be received by the Secretary of the College, Dr. C. W. Dulles, on or before May 1, 1895.

Each essay must be sent without signature, but must be plainly marked with a motto, and be accompanied by a sealed envelope having on its outside the motto of the paper, and within it the name and address of the author.

It is a condition of competition that the successful essay or a copy of it shall remain in possession of the College; other essays will be returned upon application within three months after the award.

A Generous Gift to the University of Pennsylvania.—Mr. and Mrs. H. H. Houston have given $100,000 to the fund for the erection of a students' hall at the University. In recognition of this gift the trustees have decided to name the hall after Howard Houston, son of the donors, who was a student in the University at the time of his death.

The Eastern Iowa District Medical Society will hold its twenty-third session at Keokuk, Iowa, November 15, 1894. All members of the medical profession are cordially invited to be present.

BOOKS AND PAMPHLETS RECEIVED.

Anomalies of Refraction and of the Muscles of the Eye. By Flavel B. Tiffany, M.D. Author's Edition. Kansas City, Mo.: Hudson-Kimberly Publishing Co., 1894.

The Eye Treatment of Epileptics. By Ambrose L. Ranney, A.M., M.D. Reprinted from the New York Medical Journal, 1894.

Ueber mucinartige Bestandteile der Neurofibrome und des Centralnervensystems. Von P. G. Unna. Sonder-Abdruck aus Monatshefte für praktische Dermatologie. 1894, Band xviii. Verlag von Leopold Voss, Hamburg u. Leipzig.

Hysterical Seizures Relieved by Hypnotic Suggestion. By Judson Daland, M.D. Reprinted from the University Medical Magazine, 1893.

The Diagnosis of Mitral Valvulitis, with a Report of Three Cases. By Judson Daland, M.D. Reprinted from the International Clinics, vol. iv, third series.

Saint Bartholomew's Hospital Reports. Edited by W. S. Church, M.D., and W. J. Walsham, F.R.C.S. Vol. XXIX. London: Smith, Elder & Co., 1893.

Three Years' Experience with the Electrical Treatment of Fibroid Tumors of the Uterus, with a Report of Forty-four Cases. By By W. L. Burrage, A.M., M.D. Reprinted from the American Journal of Obstetrics, 1894.

Breathing Exercises a Curative Measure for Consumption, with a New Theory Advanced as to the Etiology of that Disease. By Eugene L. Crutchfield, M.D. Reprinted from the Maryland Medical Journal, 1894.

Abstract of Proceedings of the Michigan State Board of Health. Regular Meeting, January 12, 1894. Lansing, 1894.

Cardiac Asthenia, or Heart-exhaustion. By J. M. Da Costa, M.D., LL.D. Reprinted from the American Journal of the Medical Sciences, 1894.

Saunders' Question Compends, No. 21. Essentials of Nervous Diseases and Insanity: Their Symptoms and Treatment. By John C. Shaw, M.D. Philadelphia: W. B. Saunders, 1894.

Saunders' Question Compends. Essentials of Anatomy. By Charles B. Nancrede, M.D. Philadelphia: W. B. Saunders, 1894.

A Retrospect of Surgery. January, 1890 to January, 1894. Prepared by Francis J. Shepherd, M.D., C.M. Montreal Printing Co., 1894.

Transactions of the New York State Medical Association for the Year 1893. Volume X. Edited for the Association by E. D. Ferguson, M.D. Published by the Association, New York City.

The Subcutaneous Use of Chlorid of Gold and Sodium with Iodid of Manganese in Pulmonary Tuberculosis. By William S. Boardman, M.D. Reprinted from the Boston Medical and Surgical Journal, 1894.

The Electrical Treatment of Fibroid Tumors. By G. Betton Massey, M.D. Reprinted from the Journal of the American Medical Association, 1894.

Electricity in the Treatment of Chronic Prostatitis and Other Conditions Underlying Impotence in Men. By G. Betton Massey, M.D. Reprinted from the University Medical Magazine, 1894.

Conservatism in Accidental Surgery. By Edmund J. A. Rogers, M.D. Pamphlet. Denver, Col., 1893.

A Contribution to the Study of the Myelin Degeneration of the Pulmonary Alveolar Epithelium. By Veranus A. Moore, M.D. Pamphlet. Washington, D. C., 1893.

U. S. Department of Agriculture, Weather Bureau. Circular of Information. Protection from Lightning. By Alexander McAdie. Washington, D. C., 1894.

Address of Welcome to the Association of Military Surgeons. By Samuel C. Busey, M.D. Delivered at Washington, May 1, 1894. Pamphlet. Washington: Gibson Bros., 1894.

Forty-fourth Annual Report of the Southern Home for Destitute Children, formerly Union School and Children's Home, corner of Broad and Morris Streets, 1894.

Treasury Department, Quarantine Laws and Regulations of the United States, April 26, 1894. Washington: Government Printing Office, 1894.

What Results May be Expected from Celiotomy in Insanity, Hystero-Epilepsy, and Kindred Neuroses. By W. P. Manton, M.D. Reprinted from the Physician and Surgeon.

A Plea for the Amelioration of Insane Women Suffering from Local Disorders. By W. P. Manton, M.D. Reprinted from the American Gynecological Journal, 1893.

A Contribution to the History of Ovariotomy in the Insane. By W. P. Manton, M.D. Reprinted from the Transactions of the American Association of Obstetricians and Gynecologists, 1889.

Sudden Emptying of the Bladder as a Cause of Cystorrhagia. By Walter P. Manton. M.D. Reprinted from the American Lancet.